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PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*Contributions to the Volumetric Analysis of Urine.*

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I. *The method employed.*—The urine has been carefully collected for twenty-four hours, and its quantity measured, except when some accident has happened, and it has been necessary to estimate the entire quantity; these cases are noted as "estimated." In observations on his own person the writer has collected from half-past seven each morning to the same hour the next morning. The mode of living has been as regular as possible, but not restricted:—Breakfast at eight—coffee, bread, and an egg; dinner at two—mixed; tea at seven—tea, bread, and an egg; not much walking, but generally from three to six hours spent each day on an open car; sleep, from seven to eight hours.

The analyses have been performed according to the directions given in the treatise of Neubauer and Vogel. French weights and measures have been exclusively employed, for one reason—because calculation is so much simplified; and for another—the

French system is used by most observers, and therefore observations recorded according to it are more readily compared with others. It is a matter of no moment to the reader what system is used by any observer, as the value of the observations is entirely relative. The student learns nothing by being informed that on a certain day a patient passed 50 grains of sulphuric acid in his urine, although he knows that 480 grains make an ounce. But he has learned something if he has been informed that a patient passed 3·5 grammes of sulphuric acid a-day during an attack of rheumatic fever, and only 2 grammes a-day after his health was re-established, although he does not know how many grammes go to an ounce. In every case it is the *relative*, not the *actual*, quantity of the urine and its constituents which is of importance. It has been found a great saving of time to measure off half the amount of urine to be analyzed, and to add the test, first in quantities of CC 2·5, till the point of saturation has been passed; then to add the other half of the measured quantity of urine, and let the test fluid flow in until it is within CC 5 of the point of saturation; after that to add it in single centimètres until exact saturation has been obtained—*e.g.*, CC 15 of the mixture of baryta solution and urine is the usual quantity operated on in determining the amount of urea. Take CC 7·5 first, and add the mercury solution in quantities of CC 2·5. Suppose that CC 12·5 is found to be too little, and CC 15 too much. Add the other CC 7·5 of the urine mixture, and at once let CC 25 of the mercury solution flow in. Five testings more, adding CC 1 each time, are the most that can be required. Following this plan, the amount of urea can be determined to within 0·5 gme., or, at most, 1 gme., the sulphates and phosphates to within 0·05 gme.; and, after some practice, the amounts of the urea, SO_3 and PO_5, can be determined in about an hour.

The writer has tried a variety of arrangements in estimating the quantity of SO_3 and PO_5. For the former he finds the quickest way to be to heat the urine in a flask to 212°, and to add the chloride of barium solution; then to filter a little into two small test-tubes of equal size, and to add a drop of the barium solution to the one, and of the sulphate of potash solution to the other—repeating the test, after fresh additions of the fluid in the burette, until equal cloudiness is produced in both portions of the filtered urine. The student will find it a most troublesome analysis for a long time; but after awhile he will have learnt, from the amount of cloudiness in the test-tube, how much more of the chloride of

barium solution he ought to add; and three or four testings will probably bring him to the point of saturation. Uranic oxide solution should always be employed in testing for PO_5; and the nitrate is preferable to the acetate, as there is less trouble in preparing it. The uranic oxide is dissolved in the smallest quantity of dilute nitric acid that will take it up, and the solution diluted to a proper strength, exactly as Neubauer directs to be done with the acetate. The carbonate of soda uranic oxide can be used for making the solution; this is an oxide precipitated by carbonate of soda, and retaining some of the precipitant; it effervesces with acids; about 30 gmes. of it are required to make a litre of test solution.

II. *The objects kept in view.*—Little advantage would be gained by observations made at random; the work of Dr. Parkes on the urine has, therefore, been taken as a basis, and those points have been fixed on for study in which information was found to be deficient. The observations in this paper were intended to bear on the following points:—

1. The daily variations in the constituents of the urine in health, during a considerable period.
2. The alterations in their quantity, arising from taking various medicinal substances into the system.
3. The alterations in their quantity, arising from the presence of disease.

This last, as it is the most important to practical medicine, so is it also the most difficult subject of research. It is in many cases impossible to ascertain the normal amount of excretion in the individual, and it is difficult to ascertain how far a change in the amount excreted is due to altered conditions of diet and exercise, and how much to the disease itself. Finally, the observations hitherto recorded are so meagre in detail—no notes being given of the patient's weight or diet, and, especially, the per centage amount of the urinary constituents being only given, and not their amount in twenty-four hours—that it is impossible to use them for comparison with cases more carefully recorded. The cases reported in this paper are not put forward with a view to support any theory, but are trustworthy records, so far as they go, of certain diseased states, and the amount of urinary constituents found in them. Any sound theory can only be formed by a generalization from a large

number of such records. Those only who have tried it know the difficulty that exists in preparing careful records of cases, especially in private practice. It is impossible to pick out more than a very few cases in the course of many months; it is, therefore an investigation in which many ought to be employed, that so a mass of reliable material may be collected for the use of those who have time and ability to arrange and generalize it.

III. *Results.*—In treating of these it will be necessary to unite the first and second of the objects kept in view in the observations into one section. The reason of this is, that the author was not aware that the action of the substances he was experimenting on continued so long perceptible after one or two doses of them had been taken into the system; and at first he took successive doses too close on each other for the urinary constituents to return to their normal condition. The first five and the last four observations in the table were made at times when the system was certainly free from the action of any drug. The following are the results:—

	Urea Grammes		SO_3 Grammes
Highest—March 12, . .	39·8	June 2, . .	2·772
Lowest—June 3, . . .	32·5	March 11, .	2·367
Mean of the 9 observations,	35·75	. . . . .	2·613

The mean quantity of phosphoric acid for the first five days during which observations were made on it was 2·308, and for the remaining fourteen days, during which medicinal substances were taken, it was 2·415; or, omitting two observations which were exceptionally high, evidently from some other cause than the action of any drug, it was 2·351. This is not a sufficient variation to found any conclusion on, especially in the case of phosphoric acid, which is liable to vary much with the quantity and quality of the food which is taken.

The observations on the action of the bicarbonate and the chlorate of potash lead to interesting results:—

1. The urinary water was increased after the first dose, generally to a considerable amount; a second or third dose did not keep up the diuresis. On one occasion (6th April) the water was less than usual, but there was some purging.

2. The urea was, in almost all cases, increased on the first dose of the medicine being taken. The mean of March 16th, 24th, April 5th, 22nd, May 7th, is 39·6; or, omitting April 22nd, it is 40·6. It would appear, therefore, that the primary action of the potash is simply to wash the urea out of the system; and that if the previous excretion has been considerable, as on some days previous to the 22nd April, the increase is not so remarkable, though even on that day there was an increase of more than four grammes above the previous day. After the surplus urea has thus been excreted the quantity generally falls for a day or two, as is seen on April 8th, which is the lowest in the whole table, although 2·5 gmes. of chlorate were taken that morning. Other instances of the same thing can be seen. There seems, next, to have been a secondary increased formation of urea from increased metamorphosis, which rapidly brought up the excretion to the mean, or even above it. This is not well seen in the first part of the table, because the successive doses were taken too close on one another; but in the latter part, where the intervals are wider, the numbers are such as to afford a strong presumption of the correctness of the supposition. The circumstance that the amounts of urinary ingredients have a tendency to run in cycles of a week or ten days makes it always a matter of doubt in how far an increased quantity is a co-incidence with, or a consequence of, any given state.

3. Even after giving its full weight to the remark just made, the presumption seems very strong, indeed, that the sulphuric acid is decidedly increased by the potash, particularly by the chlorate. It will be observed that a day or two after the ingestion of the potash there is a very marked increase in the quantity of SO_3, and this increased elimination continues for several days, being generally higher than the highest normal amount noted, and also higher than the highest mean amount recorded by Parkes. The observation on the 14th May is remarkable; it is the highest recorded—3·195 gmes. Was it due to the continued action of the potash? or was it due to an accidentally lessened excretion on the previous two days, being followed by an excessive excretion on the third? In Case I., where the chlorate was administered in considerable quantity, the effect on the SO_3 must be considered very doubtful. Still the evidence, such as it is, which is afforded by this case is in favour of the increase of the acid by the action of the potash.

On the whole, therefore, these observations tend to confirm the conclusions come to by Parkes relative to the effect of liquor

potassæ and nitrate of potash on the tissues, and make it probable that the potash compounds generally have a similar action.

IV. *Effect of disease on the urinary constituents.*—It is natural to expect that if disease either retards or increases metamorphosis of tissue the result should appear in the altered quantity of urinary constituents. There are, however, a number of modifying circumstances which make it anything but easy to determine what the absolute effect of any disease is; for, in the first place, the mere presence of disease greatly alters the quantity of matters assimilated, and therefore, as a consequence, the quantity excreted; and, in the next place, there are no means of determining with certainty whether diminished excretion is due to diminished production of the ingredient, or to its being retained in the system, or got rid of some other way. In illustration of this, reference may be made to Cases I., II., and IV.; they are all characterized by a remarkable diminution of the constituents of the urine. In No. I. there seems little doubt that the increased severity of the head symptoms and the diminution of urea were somehow connected together; but which was the cause of the other? On review of the whole case, and taking into account the effects of treatment—observing that no measures intended directly to affect the increase of the urea produced any benefit, whereas a mild mercurial treatment appeared to benefit the head, and was followed by an increase of the urea—one is inclined to think that an altered state of the brain produced an altered state of metamorphosis. If this supposition be correct, it would account also for the diminution in the sulphates and phosphates. Case II. could be similarly explained. On the other hand, No. III. presents a case of very marked head affection, in which, taking into account the age, weight, and amount of nutriment, the urea SO_3 and PO_5 are above the normal amount. A mere per centage analysis would have made this a most telling case in favour of the theory that disease of the nervous system produced increase in the PO_5, as it amounted to about three and a half per thousand; but even the excretion in twenty-four hours is larger than might have been expected, if diminished nervous action in all cases diminished metamorphosis. In Case IV. it was the excessive diminution in the urinary ingredients which led the author to consider the case of a very serious nature, at a time when the general symptoms were slight and obscure; and it is no doubt a good general rule to give a very guarded prognosis whenever

there is long-continued and marked diminution in the amount of secreted solids.

It has become the practice with some to give phosphates in cases of disease of nervous tissue, and the plan was followed at the commencement of the treatment of Case I. Farther reflection, however, led to giving up the practice. If the phosphates are wanting in the urine it is not because they are not supplied in sufficient quantity to the system, for there is always abundance of them in the food. Either they are not assimilated at all, and are passing off some other way—in which case there is no reason to suppose that phosphate of zinc or iron would be better assimilated than the phosphorus normally present in the food—or, possibly, they are being used up in the construction of some abnormal growth, as chloride of sodium seems to be in the hepatizing lung of pneumonia, and then an additional supply of them would be positively injurious if absorbed at all. It may, however, be well doubted whether it is possible to supply phosphorus or sulphur to the tissue of either nerve or muscle by putting phosphates into the alimentary canal. It is probable that the phosphorus contained in the phosphates which are in the blood is on its way *out of*, rather than *into*, the tissues, and that it is introduced into them as an elementary part of the albuminoid components which pass into the blood as chyle. If this be true, then the administration of phosphates, with a view to their being assimilated, is useless.

The author is inclined to consider the changes in the amount of the sulphuric acid as of great interest. It is more steady in its daily amount than the phosphoric acid, and is not so liable to sudden unaccountable variations. Its amount generally bears some relation to the quantity of urea, an increase in the latter being frequently accompanied or followed, sometimes at an interval of two or three days, by an increase of the SO_3. The action of potash in increasing its amount makes it highly probable that its variations may be in many cases taken as a measure of the amount of metamorphosis, especially if corresponding variations take place in the amount of urea.

Finally, in the present state of our knowledge, it is easier to connect changes in the amount of urinary constituents with alterations in nutrition common to the whole system than with lesions of individual organs. In other words, the volumetric analysis of the urine will not help us to diagnose what particular organ is affected—that must be determined in other ways. But it may often very

much help us in determining how far disease has penetrated among the processes of secondary nutrition, and therefore how far it is likely to touch on the springs of life.

Case I.—Mr. H., architect, aged thirty-two; weight about fifty-five kilogrammes. He had been complaining for some months of neuralgic pains in the head, for which he had been for some time under treatment. He was first seen by the author on 7th of last January. He complained then of sickness of stomach, white tongue from epithelium, sleepiness, shooting pains in the head. He was ordered 2 grs. of mercurial pill, and 2·5 grs. of dried soda every night. He continued to get worse till the 11th, stating that his head has a bursting feel. His mind wanders; he puts in one word in place of another, and is very drowsy. His mouth became slightly affected after the third pill.

13th.—To have three grains phosphate of zinc thrice a day, and four grains of James' powder every night, and a blister to the nape; a vapour bath every night. Diet to consist largely of milk, and some meat.

16th.—Feels much better. Wandering of mind gone, puts in his words right. He has no acute pain in the head, but a heavy pain across the vertex and back of the head.

21st.—Feels better and stronger; no wandering; tongue almost free from its coating of effete epithelium. Complained for a day or two of pain in the loins, for which he was rubbed with croton oil. The pain is now gone. He has little shooting pain in the head, but has dull pain across the forehead. Sleeps less in the day and better at night. The appetite is better. The urine has an indescribable sickening smell, is pale and opalescent. Albumen, a trace. The vapour baths, zinc, and James' powder, are continued.

February 2nd.—Continues better; urine pale, greenish, and generates vibriones when it has stood for some time. Discontinued medicine.

10th.—Appetite not so good for some days. Occasional forgetfulness. Drowsy, and sleeps a good deal in the day; bowels regular; pulse 96. Infusion of gentian.

13th.—Much as when last reported; urine slightly albuminous. A weak solution of sulphate of copper produces a precipitate. When this is re-dissolved by liq. potass, and boiled, the urine becomes brown, but not violet. Twenty drops of dilute nitric acid thrice a day.

March 5th.—Since last report tried tincture of the muriate of iron, with quassia, but it made his appetite worse; so he got carbonate of iron instead. He could sleep to any amount; appetite worse on some days than others: occasional weight in the head; appetite bad; puffiness under the eyelids; bowels regular; pulse 96.

23rd.—Decidedly worse; memory bad, and occasional wandering; great drowsiness. Other symptoms as before. He has been taking Griffith's iron mixture, and is to continue it, and take 5 grains of iodide of potassium with each dose.

26th.—Much worse; mind wanders; and he sleeps all day long; tongue covered thickly with white epithelium; pulse 96. Discontinue iron; continue iodide, and take 2 grs. blue pill and 2·5 grs. colocynth pill every night.

27th.—Wandering less. Urine becomes pink on the addition of nitric acid.

29th.—Much wandering yesterday and to-day; twitching of the hands; slept all the morning; 30 grains chlorate of potash twice a-day. Continue blue pill and colocynth.

30th.—Twitching gone.

He now went to Dublin, and remained about a week, taking no medicine. He returned, better, on the 11th April. On the 15th he began taking 30 grains of chlorate of potash every morning, and on the 23rd as much more in the afternoon.

3rd May.—Has been gradually getting worse since last report. Vision is double, and tongue loaded with epithelium. As no result had followed from the chlorate, and he was evidently getting into the same state as that reported on April 26, *et seq.;* it was changed to the iodide of potass. He was put on mercurial pill and dried soda as at the beginning of his treatment; and a constant blister was opened on his neck.

9th.—He is already better. Double vision gone; less confusion and drowsiness; appetite better; tongue comparatively clean.

From this time he continued to improve, the head symptoms being much less, except that he had some numbness and pricking in the right hand, and some unsteadiness in his gait. He was sent to the sea side on the 17th May, and is reported to be progressing favourably. He was continuing the iodide, and afterwards the bromide, of potassium, and the two-grain doses of mercurial pill, no effect being produced on the gums.

Analysis of Urine in Case I.[a]

Date	Urine C.C.	Urea Gmes.	SO_3 Gmes.	PO_5 Gmes.	$NaCl$ Gmes.	
Jan. 13,	1,050	24·15	1·281	1·470	2·100?	Taking mercurial pill and soda.
,, 15,	980	20·58	0·980	0·980	4·900?	Taking phosphate of zinc and James' powder. Getting worse.
,, 19 & 20,	2,485	37·27	—	1·668	12·42	Getting better, and continuing medicine.
,, 31, & Feb. 1,	2,275	35·81	—	2·275	7·892	Continuing better.
,, 12,	2,275	34·12	1·706	1·896	9·100	Rather worse. Infusion of gentian.
,, 19,	1,680	27·72	1·596	2·016	6·720	Do. Nitric acid.
March 6,	2,000	34·00	1·500	2·000	—	Much as before.
,, —	2,100	31·50	1·260	—	—	Decidedly worse. Iron; iodide potass.
,, 27,	1,460	23·36	1·168	1·533	7·300	Worse, and tongue coating. Mercurial pill. Iodide.
,, 29,	—	—	—	—	—	Urea, &c., estimated same amount as 27th. Twitching. Chlorate of potash.
,, 30,	990	15·84	0·841	1·039	—	Rather better, and twitching gone.
,, 31,	1,350	21·60	1·135	1·485	6·75	Ibid.
April 13,	2,100	31·50	1·890	1·995	—	Much better.
,, 14,	2,000	30·00	1·900	1·500	—	Ibid.
,, 19,	1,630	24·45	1·500	1·467	—	Chlorate of potash since 15th; thirty grains a day.
,, 24,	2,070	31·05	1·811	1·552	—	Do. 60 grains a day. A change for the worse on the 23rd.
,, 29,	1,435	22·96	1·509	1·435	—	Getting worse.
May 6,	1,400	22·40	1·400	—	—	At the worst, and beginning mercurial pill.
,, 16,	1,870	29·92	1·916	1·855	—	Much improved.
Aug. 26,	1,550	24·80	1·860	1·627	—	Has returned from the sea, very much better.

[a] The urine was more or less albuminous every time it was examined. On one occasion, when it seemed considerable, it was collected and weighed; the amount passed in twenty-four hours was 1·18 grammes. The presence of albumen is apt to interfere with the determination on the *NaCl*.

Case II.—T. B.; age forty-five; weight, fifty-one kilogrammes; labouring man. He has been ill seven weeks, during which time he has suffered from severe pain in the right side of the head. He has had vomiting of food for the last three weeks. At present, 16th April, he complains of numbness of the right side of the face. He is deaf in the right ear; squints inwards with the right eye, and sees double; bowels constipated; appetite bad, and food rejected as soon as swallowed; tongue furred; pulse 93.

21st.—Put a seton in the nape. To have milk diet exclusively, and five grains iodide of potash thrice a day.

25th.—He is much better. Tongue cleaning; pain less; milk retained by the stomach; bowels regular without medicine.

May 28th.—He went to his home a day or two after the last report, and gained flesh. He is now stronger, but the numbness in the face continues. The double vision and the deafness, and the pains in the head, have returned lately. Appetite pretty good, and no vomiting; bowels regular; seton discharging; pulse 84. The urine is milky-looking, and the colouring matter very deficient. The milkiness is due to small granules, but whether they were introduced from without or not is unknown. To have iodide of potassium, blue pill, and dried soda.

17th June.—Is free from pain in the head, but the squint, double vision, &c., continue. His appetite is better.

Analysis in Case II.

Date	Urine C.C.	Urea Gmes.	SO_3 Gmes.	PO_5 Gmes.		
April 17,	885	14·16	0·903	1·150	High coloured; slightly albuminous.	
„ 19,	600	9·60	0·780	0·660	Do.	do.
„ 20,	800	12·00	—	0·760	Do.	do.
„ 26,	850	10·62	—	—	Do.	do.
„ 28,	1,270	12·06	0·952	0·307	Do.	do.
May 28,	1,820	29·10	1·638	1·092	Very pale; rather more albuminous.	

Case III.—Mrs. G., aged seventy-one; weight, 55–60 kils. She was first seen on the 9th May. She had been complaining, for about a month, of shortness of breath on going up stairs, and had slight swelling of the feet. The pulse was 31, regular, and moderately full. Next morning the chest was carefully examined.

The heart's impulse was imperceptible, the sounds almost inaudible, no murmur; pulse, 29. Shortly after the examination she got an attack of screaming and panting, for which she had ammonia and brandy, and a sinapism over the heart; the attack went off in about twenty minutes. The tongue was loaded with white epithelium, and she complained of fulness of the stomach; bowels confined. She remained quiet all that day and night. On the 11th she suddenly again got an attack of screaming; she appeared to be insensible; the body was twisted convulsively backwards, and with each jerk a cry was uttered as in opisthotonos; the breathing was rapid, pulse more frequent, and the heart throbbed strongly; she could not swallow; turpentine was applied to the epigastrium. This state continued for nearly an hour. Cold water was then poured on the head, upon which the fit at once ceased and consciousness returned. She then got a turpentine enema; 10 grains of calomel were placed on her tongue; and she got 2·5 grains of James' powder and 2 grains of calomel thrice a-day. She remained free from any attack during the succeeding days, the pulse varying from 30 to 40, sometimes irregular; the bowels were relieved twice or thrice a-day; the dejections copious, semi-solid, light grey. She slept a good deal, but was restless; did not care for nutriment, but took about a pint of milk in the twenty-four hours. The tongue remained coated with epithelium. The calomel and James' powder were continued till the mouth was slightly affected; bicarbonate of potash was then given; a blister was opened on the vertex.

On the 20th she seemed going on well; but suddenly, without any cry or warning, she became insensible, with stertorous breathing; the pupils at first contracted, afterwards dilated, and hardly affected by light. She remained in this state about seven hours, when she became again conscious, but gradually sank, the pulse failing at the wrist, the extremities becoming cold, and consciousness remaining nearly to the last. She died early on the morning of the 21st. The urine was high-coloured and acid; it contained uroxanthin, and was slightly albuminous.

	Urine	Urea	PO_5	SO_3	$NaCl$
16th, . . .	CC 530	21·70	1·855	1·643	0·53
19th, . . .	485	16·97	1·214	1·115	—

Case IV.—H., sergeant-major,[a] aged thirty-seven, tall and spare;

[a] The author is indebted to the courtesy of Dr. Jameson for an opportunity of reporting this case, and for a copy of the report of the autopsy.

weighed 77 kils. before his illness, but is now considerably emaciated (May 1st). He states that, for about a year, he has been suffering more or less from pain in the back; about three months ago, when going down stairs, he got a sudden attack of severe pain in the groin; it was relieved after some time, but he is now again suffering from it. It shoots down into the testicle; there is no hernia; pulse is frequent; there is loss of appetite; no sleep at night, but cold perspirations; the urine is high-coloured, and deposits a red sediment.

	Urine	Urea	SO_3	PO_5	
1st, . . .	CC 450	10·8	·765	·662	
13th, . .	750	9·0	·375	·362	—Albumen, a trace.

18th.—Is no better; the pain in the groin is worse; an obscure fulness can be perceived in the left iliac fossa; and there is dulness on percussion in the left lumbar region when he lies on his face, while percussion on the other side is clear.

28th.—He has been suffering from severe pain in the left groin and hip, shooting down into the testicle. There is great pain and tenderness in the left lumbar region, especially over the kidney; percussion is dull in the same part. When he lies on his back a slight fulness is visible in the iliac region and adjoining portion of the thigh; there is a feeling of resistance on pressing it, but percussion is clear. He does not sweat at night; appetite very bad; bowels regular; pulse 100.

Urine	Urea	SO_3	PO_5	
CC 700	14·0	·560	·700	—Albumen, a trace.

He was not again examined by the author, but Dr. Jameson reports that distinct pulsation became observable in the left lumbar region, but that no bruit was audible. When rising to wash himself, on the forenoon of June 14th, he suddenly expired.

Autopsy, twenty-six hours after death.—External appearance, spare but muscular. On opening into the abdomen both the solid and hollow viscera were found healthy. On raising the left kidney an aneurismal tumour, communicating with the aorta, and about the size of the closed fist, was observed immediately behind, and intimately connected to it and to the diaphragm. In the latter was a large opening, communicating with the adjacent pleura, which contained about a pint and a-half of dark blood, partly coagulated; there was also three-quarters of a pint in the cellular tissue behind the kidney. The left sides of the last dorsal and first lumbar

vertebræ, together with the intervening cartilage, were affected with caries. The substance of the kidneys seemed healthy. The heart was small, with much fat deposited on its surface; cavities normal, as also the semilunar valves of the aorta. Both lungs healthy.

Quantity of Urine and Urinary Constituents passed each day by the Writer of the Paper.

Date	Urine c.c.	Urea Gmes.	SO_3 Gmes.	PO_5 Gmes.	$NaCl$ Gmes.	Observations
March 11	910	35·0	2·367	2·284	10·01	
„ 12	1200	37·8	2·550	2·220	12·00	
„ 13	1190	39·8	2·499	2·339	11·90	
„ 14	1045	35·5	2·610	2·247	10·97	
„ 15	1255	38·3	2·535	2·447	13·18	
„ 16	1310	39·0	2·751	2·096	12·44	Took gmes. 3 of bicarbonate of potash.
„ 17	1130	40·1	2·966	2·429	10·73	The same.
„ 18	1080	40·5	2·700	2·214	11·34	The same.
„ 19	1000	37·0	2·500	2·400	12·00	
„ 20	990	36·7	2·673	2·574	9·90	
„ 21-2	1000	38·5	2·775	2·700	10·00	
„ 23	1090	39·8	2·943	2·834	13·62	Walked 3 miles, felt fatigued; drank more water than usual.
„ 24	1560	43·7	2·808	2·418	12·86	Took gmes. 2·5 chlorate of potass.
„ 25	1180	36·6	2·832	2·360	10·62	Taste of chlorate remained till 11, a.m.
„ 26	1210	43·2	Mean 3·087	Mean 2·470	11·49	
„ 27	1390	41·5			11·12	
„ 28	1060	36·0	2·650	2·279	10·07	
„ 31	1070	Mean 39·6	—	Mean 2·467	Mean 12·62	
April 1	1225					
„ 2	1100	35·2		2·420	—	Had pyrosis; took blue pill, 2 grs.; dried soda, 2·5 grs.; co. coloc., 2 grs.
„ 3	975	34·6	Mean 2·575	2·291	—	The same.
„ 4	900	35·1		—	—	The same. Bowels acted twice, as from medicine.
„ 5	1000	39·0		—	—	2 gmes. chlor. of potash, taken in two portions, morn. & aftn.
„ 6	890	35·6	Mean 2·646	—	—	The same. Some purging.
„ 7	890	34·7	2·581	—	—	
„ 8	830	30·7	2·365	—	—	2·5 gmes. chlorate in one morning dose.
„ 9	880	34·3		—	—	
„ 10	835	33·4	Mean 3·128			
„ 11	965	38·6	2·991	—	—	7, a.m., 2·5 gmes. chlor. potash diluted.
„ 12	835	34·2	2·505	—	—	7½, a.m., 2 gmes. chlorate of potash diluted.
„ 13	910	34·6	2·411	—	—	Do., 2·5 gmes. do.

Quantity of Urine and Urinary Constituents passed each day by the Writer of the Paper—continued.

Date	Urine c.c.	Urea Gmes	SO_3 Gmes.	PO_5 Gmes.	$NaCl$ Gmes.	Observations
April 14	1020	36·7	3·034	—	—	
„ 15	960	34·6	2·700	2·400	—	
„ 16	940	36·7	3·055	—	—	
„ 17	910	36·8	2·866	—	—	
„ 18	1085	37·9	2·821	—	—	
„ 19	1075	37·6	2·902	—	—	
„ 20	950	34·2	2·517	—	—	
„ 21	1015	31·5	2·385	—	—	
„ 22	1190	35·7	2·737	—	—	2·5 gmes. of chlorate in the morning; same in afternoon.
„ 23	875	31·5	2·966	—	—	
„ 24	900	36·0	2·925	—	—	
„ 25	970	39·8	2·958	—	—	
„ 27	1080	37·8	3·132	—	—	
„ 28	970	33·9	2·716	—	—	
„ 29	1130	33·9	2·712	—	—	
„ 30	1100	34·1	2·970	—	—	
May 1	1210	38·7	2·662	—	—	
„ 2	1230	34·4	2·583	—	—	
„ 3	1095	36·1	2·970	—	—	
„ 4	970	36·9	2·813	—	—	
„ 5	940	32·9	2·679	—	—	
„ 6	1050	34·6	2·782	—	—	
„ 7	1450	40·6	3·045	—	—	5 gmes. bicarbonate of potash in the morning.
„ 8	1345	35·0	2·892	—	—	
„ 9	1110	32·2	2·777	—	—	
„ 10	1165	38·4	2·696	—	—	
„ 11	1050	37·8	2·992	—	—	
„ 12	845	33·0	2,408	—	—	
„ 13	825	35·5	2·392	—	—	
„ 14	900	34·2	3·195	—	—	
„ 15	850	33·2	2·805	—	—	
„ 16	1050	36·7	2·992	—	—	
June 2	1120	34·0	2·744	—	—	
„ 3	880	32·5	2·772	—	—	
„ 4	880	32·6	2·728	—	—	
„ 5	930	36·3	2·700	—	—	

ART. X.—*On an Unusual Form of Dislocation of the Hip-joint.* By GLASCOTT R. SYMES, one of the Surgeons of Steevens' Hospital, Dublin.

FROM the absence of any record of such, it is to be presumed that a case similar to that now about to be noticed has not occurred in the practice of any hospital surgeon in Ireland; hence, I feel it to be my duty to put on record the following. Although, for reasons hereafter to be mentioned, the treatment proved unsuccessful, yet the pathologist and surgeon will hail with pleasure any account which will increase the number of recorded cases of hitherto rare lesions; as thus our knowledge of the facts regulating their diagnosis and treatment will be enlarged to the advantage of the public.

W. L., aged thirty-six, was admitted into Steevens' Hospital 6th May, 1864; he was brought in in a state of extreme intoxication; he had been driving a "float," on the fore-part of which he was sitting. He fell off, and was dragged for some distance between the bottom of the vehicle and the ground. He could not at any time give a history of the accident; the meagre account obtained was collected from bystanders. On examination, the left leg was found to be fractured close to the ankle; the condition of the right limb, the subject of this memoir, was as follows:—It was considerably shortened, to the extent of two inches; the foot was everted to an extreme degree; the buttock was flattened; the projection of the trochanter was not so marked as at the sound side; it could be felt in a situation above and behind its usual position; there was a remarkable prominence of the soft parts on the anterior and inner aspect of the thigh; although there was no protuberance to mark its presence, the head of the femur could be felt revolving beneath the hand when the limb was moved; it was situated about two and one-half inches below the anterior superior spinous process—it was not immediately beneath, but lay on a plane very slightly posterior to it. The following measurements were taken:—

From ant. sup. spine of ilium to patella on right side, .	16¼ inches.
„ „ „ „ left „ .	18¼ „
From ant. sup. spine of ilium to int. malleolus on right side,	33½ „
„ „ „ „ left „	35½ „
From interclavicular notch to patella on right side, . .	33 „
„ „ „ left side, . .	34½ „
„ „ int. malleolus on right side, .	50¼ „
„ „ „ left side, .	52 „

From symphysis pubis to sacrum round right side, .	. 19 inches.
„ „ „ left side, .	. 18 „
From ant. sup. spine of ilium to (head of femur?) .	. 2¼ „

Taking into account the shortening, the eversion, and the flattening of the trochanter, every person who saw the case, before actual examination, pronounced that the femur was fractured. On the other hand, there was no crepitus, the head of the femur moved freely in unison with the limb, and the relative position of the trochanter and head of the bone was not disturbed in any way. Hence, the conclusion arrived at after examination was, that it was a case of dislocation of the hip-joint.

On proceeding to reduce the dislocation, the method by manipulation was first had recourse to; in the execution of the required manœuvres, a most extraordinary symptom or phase of the case manifested itself. When the thigh was flexed on the abdomen a distinct "*glug*" was heard, as though the operation of reduction had been successfully completed; but on straightening and drawing down the limb all the symptoms of the ordinary dislocation of the head of the femur on the dorsum of the ilium were found present, viz., shortening, inversion, and the head of the thigh-bone could be distinctly felt in its new position on the dorsum. To effect this change of station it had revolved through the arc of a circle corresponding to the rim of the acetabulum. When the limb was allowed to remain at rest in this new position, the weight of the foot soon rotated the leg outwards, and again we had the original dislocation reproduced. On repeating our efforts the same occurrence took place again and again.

Having failed in the reduction by manipulation, recourse was had to the pulleys, but without any effect further than that already observed—of converting it into a case of dislocation on the dorsum. When the hand was placed on the groin, in the situation occupied by the head of the bone in the primary dislocation, the limb being left to itself gradually rolled outwards, and the head could be distinctly felt rotating forward beneath the hand, until it resumed its original abnormal situation.

On three different occasions the patient was subjected, on the operating table, to our repeated and long-continued efforts at reduction. On each occasion I had the advantage not only of the advice and opinion of my own experienced colleagues, but I was also assisted by the judgment and suggestions of eminent surgeons

connected with other hospitals in this city. Notwithstanding, our efforts were not crowned with success.

The failure must be attributed to either of three causes—viz., mismanagement, fracture of the acetabulum, or laceration of the capsular ligament. With regard to the first, every person who witnessed our operations must have acknowledged that the case received fair play in every way, nor were our efforts relaxed until prudential motives obliged us to desist. I had the advantage of good advice, and did not rely on my own judgment. The limb was pulled in every conceivable direction and manner, and the arrangements for the reduction of dislocation in Steevens' Hospital are, probably, the most perfect in this country. Yet, aided by all the resources of a metropolitan hospital, the reduction was not effected.

There were none of the symptoms of fracture of the acetabulum; there was no crepitus; nor could the limb at any time be drawn down to the level of the sound one. If fracture of the rim of the acetabulum had taken place the dislocation could have been reduced, but it would have recurred again—not so in this instance, as the limb was never drawn down to its proper position.

I am more disposed to account for our failure as follows. The patient at the time of the accident was subjected to great crushing violence, such as would drive the head of the femur either through the acetabulum or the capsular ligament. If it were driven through the latter by an opening just sufficient to permit its passage, or if the ligament was detached from the bone, allowing the head of the bone just room enough to escape from the joint, the edges of the rent would tightly grasp the neck of the bone where it is constricted below the head. Such a state of things would account for our failure, and every symptom of the case; it would account for the anomalous position of the head, above the acetabulum, below the anterior superior spine of the ilium; as in whatever direction it passed out, such it would retain after the laceration; under other circumstances, it would probably have immediately resolved itself into either the ordinary dislocation on the dorsum, or the unsual form on the brim of the pelvis. The occurrence of the secondary dislocation taking place during our efforts at reduction recall to mind Mr. Wharton's case, where, in endeavouring to reduce a dislocation on the dorsum, dislocation took place into the sciatic notch; this occurred more than once in his case. The readiness with which the primary dislocation was reproduced in the case under notice can be fully accounted for on the supposition that the neck of the bone

was grasped by the rent in the capsular ligament so as to prevent the secondary dislocation from being a complete one, by allowing of rotation only to a limited extent over the rim of acetabulum. Owing to the manner in which the neck of the bone would be grasped by the edges of an opening in the ligament and other soft parts about the joint, the limb could not be drawn down to the level of the sound one. I submit that the more extension would be put in force in such a case so much the more tightly would the head of the femur be held by the opening in the ligament.

Several cases are on record of dislocation similar to that now described: so many, that Malgaigne and Hamilton both give this form a place in their description of dislocations of the hip-joint. The former calls it supra-cotyloid, the latter classes it among the anomalous dislocations. It has also been called the dislocation beneath the anterior superior spine of the ilium. I would venture to name it, "the dislocation of the head of the femur on the dorsum of the ilium, *with eversion of the foot.*" Such in reality was the case. Cummins, Morgan, and others, describe similar accidents.

Taking into consideration the secondary dislocation, the case is unique in the form of the consecutive variety. Lente has recorded a case of this very lesion, where, during efforts at reduction, it resolved itself into a dislocation into the sciatic notch. I have alluded to Mr. Wharton's case. Malgaigne has described another.

It will be remembered by the practical surgeon, that eversion can only occur in three forms of dislocation of the hip—in dislocation on the pubis always, in dislocation on the body of the ischium almost always, and in the dislocation upwards now described always. In the first case the limb is either of its natural length or slightly elongated; in the second case it is decidedly elongated; but in the form under consideration there is considerable shortening to the extent of two inches or more—so that this is the only dislocation in which eversion occurs where the limb is shortened. Finally, the symptoms of this dislocation are:—Real shortening; slight abduction; extreme eversion; projection of muscles on the anterior and internal aspect of the thigh; loss of the prominence of the trochanter; flattening of the buttock; and the situation of the head of the bone can be ascertained beneath the anterior superior spine of ilium.

Art. XI.—*Notes in Medicine and Surgery*—II. By Philip Crampton Smyly, M.D., F.R.C.S.I.; Surgeon to the Meath Hospital, and to the Institution for Sick Children, Pitt-street.

The methods recommended for the treatment of diseases of the larynx and trachea have become so numerous, within the last few years, that it is not easy to compare their several advantages. One laryngoscopist advises solutions of various irritants, introduced by means of a brush or syringe especially constructed for the purpose; another blows very fine powders into the cavity; another galvanizes the muscular structures; another pulverizes fluids for inhalation.

All these devices have been called for by the obvious advantages of applying local applications to a diseased surface. Before the laryngoscope brought the lining membrane of the larynx and trachea into view, and revealed many diseases before only guessed at, the practitioner was content with a brush, or sponge on a stick, to apply remedies to the pharynx, or to touch, with nitrate of silver, any ulcerated spot he might see. Now that he can see, in many cases, down to the bifurcation of the bronchial tubes—in almost every case the whole larynx, and a great part of the trachea—he must mount his brush on a long curved stem, he must have his peculiar syringe, his laryngeal galvanizer, his polypus forceps, his écraseur, and his fluid pulverizer.

The object of these notes is to point out some of the advantages peculiar to the last of these—the inhalation of pulverized fluids.

Inhalation is not, by any means, a new idea; vapours have been employed from the earliest times, and air impregnated with various substances suspended in it, has been a remedy of well-known value—*e. g.*, the sea breezes in scrofulous disease. But inhalation of solutions of various medicinal substances, broken into a fine spray, is new. Sales Girons published his first clinical observations in 1857; the diseases in which the inhalations were found beneficial were pharyngitis, laryngitis, bronchitis, tuberculosis, &c. Since then many, both in France and Germany, have followed him, more especially within the last two or three years, and many instruments have been invented to break the fluid into spray. It would be out of place to enter on this extensive subject here, or on the discussion whether the spray, when formed, enters the air passages at all or not, and if it does how far it can penetrate into the bronchial tubes. It is, for the present, sufficient to state, that the fluid impregnated

with substances not otherwise volatile, can be broken into such fine spray that the solution may be inhaled without inconvenience, and that the medicinal agent may thus be brought in direct contact with the lining membrane of the bronchial tubes, even as far as their small ramifications.

The instrument I use is made by Mr. Krohne, after M. Lewin's. It consists of a glass chamber, covered with an air-tight brass cap. In this cap a glass tube is fixed, almost touching the bottom of the glass vessel. The end, outside the brass cap, is drawn out to a capillary opening, and bent at an angle. Into another part of the cap an air-pump is screwed, to press air into the chamber, thus forcing any fluid introduced into the chamber through the capillary opening with very great force. A glass cylinder, open at both ends, and having a small round hole in the side, is fixed by means of a metal rod at a short distance, so that the stream from the capillary opening may enter the hole in the side. Opposite this hole a metal button is fixed, on which the stream strikes, and is broken into a fine spray which falls out of the cylinder at each end. The patient is then placed opposite one end of the glass cylinder, and by breathing draws a considerable portion of the spray into his air passages.

I have employed the pulverized fluid thus formed in several cases, and with very good results, in which I had before been employing other remedies without effect; these I will pass over, and merely give one case in which every other remedy either failed or could not be employed.

Mr. R. consulted me, about the end of June, 1864, complaining of a constant irritation of the throat, preventing sleep, and causing great distress. His throat was so sensitive that the examination with the laryngoscope was very difficult—almost impossible. However, after a time, I got a very good view of the entire larynx. The epiglottis was very red, the mucous membrane between the arytenoids and the false cords was congested and slightly excoriated. The vocal cords were quite white, except towards the sides attached to the larynx. I tried to touch the parts with a brush charged with a solution of nitrate of silver, but could not get it past the base of the tongue. I ordered, then, a strong gargle of bromide of ammonium, and to come again in a day or so. A few days after he returned, saying the gargle had done him some good. The examination was not quite so difficult, and I succeeded in passing a brush between the arytenoids. There was

very little spasm, but he was attacked with violent vomiting, which continued for three hours; after this he would not allow a brush to be again introduced. He tried several gargles, but without any effect, and inhaled the vapour of hot water, &c. He got worse and worse, so that for many nights he had no refreshing sleep. I then told him I had just obtained Lewin's fluid pulverizer, and that I wished to try its effect in his case. The first day he inhaled the spray of a (15 grains to the oz.) solution of nitrate of silver for about ten minutes; after the inhalation he said he felt the whole throat rather sore. Next day he came for a second application; the soreness, after the first, had quite gone off towards evening, and he had slept, without any disturbance from his throat, the whole night. The inhalation was repeated twice. His throat was so much imporved that he was able, a few days after, to leave Dublin to travel for pleasure.

October 13th.—Mr. R. has not had any return whatever after the second application of the spray of nitrate of silver solution.

ART. XII.—*Remarks on the Hebrew Catalogue of Skin Diseases.* By T. W. BELCHER, M.A., M.D., Dub.; Fellow of the College of Physicians; Physician to the Dispensary for Skin Diseases, &c.

I BEG to refer the readers of this Journal to the number for May, 1864. In that number appeared an essay of mine, entitled "The Hebrew, Medieval, and Modern Leprosies Compared," which concluded in the following words:—"They (the minor skin affections) were classed with leprosy by Moses, and, altogether, probably form a better classification of cutaneous diseases than any of the systems now extant."

I wish in the present essay to note particularly the Mosaic nosology above referred to; and before doing so I would set before the reader, in as concise a manner as I can, a *resumé* of such parts of the first essay as relate to the subject now under consideration.

It will be observed that I controverted the position of the learned Erasmus Wilson—that Hebrew leprosy and Greek elephantiasis were identical; and I endeavoured to do this by proving that black and white were not the same, and that hypertrophy and atrophy were absolutely different.

That elephantiasis may have existed among the Jews side by

side with leprosy, as it still does in Tangiers, I did not deny; nor did I deny a possible pathological connexion between the two diseases. I thought the learned Mead had just grounds for considering elephantiasis to have been the disease of Job, and I still think so. (See his "Medica Sacra," quoted in my former essay.)

When I wrote the first essay I had not seen the fifth *illustrated* edition of Mr. Erasmus Wilson's great work; and I mention this fifth edition now, because it adds much to my argument, and strengthens my previous convictions. Both in the Preface and in the Appendix a lengthened strain is played to the tune elephantiasis, as if all said in the body of the work were not sufficient, and as if it were the key-note of his system. In that Preface assertion occupies the place of argument; and as some will still call lepra, leprosy, he wants to get rid of the term altogether, or to apply it to elephantiasis. Thus he remarks "the term LEPRA—*der Aussatz* in German—signifies THE eruption, the great eruption. It is synonymous with LEPROSY, THE leprosy, the ancient leprosy, that which has since been called elephantiasis. Therefore let us bestow the term lepra where it rightfully belongs, or reject it altogether. The trivial affection which we at present call lepra has no single point of comparison with leprosy."

Now, though *der Aussatz* may be rendered "the eruption;" yet in any German and French dictionary we shall find *lèpre* as the French equivalent term. This brings us further; for very near to our English term leprosy is the French *léproserie*, which is in German *das Spital für Aussätzige*, in plain English, the leper hospital. Through the French and English the German word is thus undoubtedly connected with the Latin lepra; so here we are brought back to the point yet to be explained by Mr. Erasmus Wilson, the *proof* that der Aussatz (or lèpre) and elephantiasis are synonymous. That "the trivial affection which we at present call lepra has no single point of comparison with leprosy," is quite true in his sense of the word leprosy (*i.e.* elephantiasis); but that the squamous disease, which is trivial with us but serious in the East, has points of comparison with Hebrew leprosy I have, I trust, abundantly shown. At page 360 of Mr. Wilson's work we are told, with reference to elephantiasis—"the term *mal rojo*, used in Spain, calls the attention to the dark red, or reddish brown, hue of the diseased skin; while in other countries it has been named *mal noir*, also from the dusky hue of the skin, and to distinguish it from the common white leprosy, *lepra*." After this it may well be asked,

how can *mal rojo* or *mal noir* be identified with the "bright white berat" of Moses, with the white scaly (λεπίς) λεπρα of the LXX, or with the disease of Gehazi, who "went out from Elisha's presence a leper as (white as) snow?"

The appendix, already noted, contains some of Mr. Wilson's views of the cutaneous nosology of Celsus. After stating the value of his testimony, he mentions the account of elephantiasis in the third book (Cap. 3), giving Celsus due credit for accuracy of description, but observing that he does not mention the word *lepra*. Truly he does not; for he had not fallen into the modern method of confounding lepra and elephantiasis as one disease. Repeated allusion has been made to the pathognomic sign of Hebrew leprosy—the white scaly eruption. Mr. Erasmus Wilson thinks elephantiasis was the Hebrew leprosy, and that Celsus most accurately described that elephantiasis. He does not, however, give the most striking part of that description, which is here subjoined:—"Summa pars corporis crebras maculas crebrosque tumores habet; rubor earum paulatim in *atrum colorem convertitur*."

I ought, perhaps, to remark on the vitiligo of Celsus, since Mr. Erasmus Wilson thinks it identical with lupus non exedens. Because the latter disease gives the affected surface a veal-skin appearance, he observes:—"This white and glistening appearance, bearing some resemblance to the skin of calves (vituli), seems to have given rise to the generic term." When we come to read what Celsus really says about vitiligo, we find, as stated in my former essay, his three divisions of it—alphos, melas, and leuce. Now, elsewhere, Mr. Erasmus Wilson speaks of alphos of Celsus as the squamous lepra—the boak of Moses; and leuce he terms morphœa alba, a form of elephantiasis; while he also speaks of vitiligo (the common name of alphos, melas, and leuce) as lupus non exedens. I need scarcely say that this confusion will not fit the descriptions of Celsus any more than it did those of Moses, who was quietly shelved as an inaccurate describer; and, if I may again refer to my former paper, few things have been more clearly laid down than the soundness of the opinions of Rhenferdius, Mead, Good, and others, who identified the three varieties of vitiligo of Celsus with boak, berat cecha, and berat lebena of Moses. Although we are referred by Mr. Wilson to some fifty skin diseases, described by Celsus in his third, fifth, sixth, and seventh books, yet the reader will be surprised to learn that no part of his cutaneous nosology is contained in the third book. Placed between descriptions of "morbus

arquatum" and ἀποπληξία we find mention of ἐλεφαντίασις; but it is plain to any reader that Celsus had no idea of its being a skin disease at all, much less that it was the leuce of the Greeks or leprosy of the Hebrews, which he describes as a species of vitiligo in Book V. It is not until the reader has passed over all the fourth, and the mass of materia medica disquisitions in the greater part of the fifth book, that he comes to the cutaneous nosology, which the learned Mr. Erasmus Wilson has certainly studied with zeal and ability.

Before proceeding to the consideration of the Levitical nosology referred to in the opening portion of this paper, it may be well to define clearly what is here meant by the term "classification."

Any one who feels an interest in the subject is aware that our existing classifications of skin diseases are so numerous, and so unsatisfactory, that each writer in general endeavours to establish a peculiar nosology, which is as carefully set aside by the next author. We even find that an author may set aside his own arrangement in favour, not of one improved on the previous model, but of one of a wholly different kind. This Mr. Erasmus Wilson has done—and how rare is such an exhibition of literary candour!—while the Preface and Appendix to his fifth edition show that his later classification is not generally received as satisfactory.

Can it be possible, then, that so old-fashioned a writer as Moses really gave a list which comes closer to nature than any novelty of our own day? I propose to consider this question; and I here use the term *list* as synonymous with classification, because the latter term, in its rigidly strict sense, is inapplicable to the present subject.

A list of skin diseases, according to my humble view, should be as simple as possible, and should set forth the varieties so arranged as to be readily distinguished one from the other, and treated most successfully.

The simplest plan would seem to be that which describes the disease in the way in which it appears to the ordinary acute observer, discarding any system based on pathology or any other part of medical science, for the valid reasons that such science is incomplete and its conclusions are largely controverted. But it is attempted to make a classification a complete list; to include under sub-classes all varieties, ordinary and extraordinary, and it is here that so many fail, because many diseases, or natural facts, will not fit themselves to classifications, or laws of nature, constructed by partially-informed men.

Reading the thirteenth chapter of the book of *Leviticus* in this light, we find in it an enumeration of various kinds of skin disease, with directions for diagnosis. These directions are intended to apply to morbid appearances presenting themselves to an ordinary acute observer, who, in his official capacity, is called on to distinguish one disease from another, to separate the patient from society, or to restore him to it.

It did not profess to be an arrangement including every possible variety under its proper class, according to scientific opinion as to its nature; it was eminently practical, designed for a practical purpose, and for practical men.

I shall now give the nosological table referred to, adapting to it most varieties of skin disease. These I shall give mostly according to the nomenclature of Willan, as it is sufficiently comprehensive, is well known, and approaches more nearly to the Levitical arrangement than any I know:—

1

Including vesiculæ, bullæ, and papulæ.

שאת (shaat), herpes or tetter, rendered "a rising" —*Lev.* xiii., 2; translated by the LXX. *οὐλή*, a scar or mark. Varieties—Herpes, eczema, pemphigus, rupia, lichen, prurigo.

2

Including pustulæ.

ספחת (saphat), or dry scall; "a scab"—*Lev.* xiii., 2; *σημασία* (LXX.), a sign. Varieties—Psoriasis (dry scall), pityriasis, and icthyiasis.

3

נתק (netek), or humid scall; incorrectly rendered "*dry* scall"—*Lev.* xiii., 30; *θράῦσμα* (LXX.), a plague, or breech, or crust. Varieties—Porrigo, sycosis, impetigo, ecthyma, scabies.

4

Including squamæ.

בהרת (berat), "bright spot"—*Lev.* xiii., 2. Varieties—בהת־לבנה (berat lebena), *λεύκη* (Celsus), and בהרת־כחה (berat cecha); *μέλας* (Celsus).

5

בהק (boak), "a freckled spot"—*Lev.* xiii., 39; also described, in the same verse, as "darkish white;" *ἀλφός* (Celsus).

6

Including maculæ. { נגע (nega), "plague"—*Lev.* xiii., 29; (a blow, or bruise, or morbid appearance—ἁφή, LXX.). Varieties—Ictus, lentigo, ephelis.

7

Including tuberculæ. { שחין (shechin), "a boil"—*Lev.* xiii., 18; ἕλκος, LXX.; (h)ulcus, Vulgate—an ulcer. Varieties—Acne, elephantiasis, molluscum, frambesia.

8

מכוה־אש (mecutash), "a hot burning," lit. a fiery inflammation—*Lev.* xiii., 24; κατάκαυσμα πυρὸς, intense burning of fire—LXX.; "caro autem et cutis quâ ignis exusserit"—Vulg. Varieties—Plague, anthrax, purpura, lupus.

I omit the exanthemata from this list, because they are really *febrile* diseases; and, although Dr. Neligan has omitted from his order "exanthemata" the several species of continued fever, variola, varicella, rubeola, and scarlatina, along with erythema, urticaria, and roseola, he has included in it erysipelas, which is a vastly more febrile disease than varicella at any rate. That there is a disease of the skin in all these affections there can be no doubt; but the *febrile* symptoms of most of them are those which would first attract the notice of the ordinary observer. Under the Mosaic law the exanthemata evidently were not considered skin diseases; the persons affected with them could not be "brought to the priest," as were all who were presumed to be afflicted with cutaneous disease. Yet, as it may be truly alleged that the minor exanthemata (erythema, urticaria, and roseola) *are* skin diseases, they can be easily included under one or more of the heads above given.

It may be well to give a few remarks explanatory of the Levitical nomenclature.

שאת (shaat), translated "a rising," seems to have been understood as indicating the presence of any minute utricle or bladder of the cuticle. Willan has made but slight differences in his definitions, save as to size; and the term may be presumed to have been co-extensive at least with what the Greek physicians called "phlyctænæ."

ספחת (saphat), translated "a scab," is, according to Dr. Mason

Good, the dry "sahafati" of the Arabian writers, the Arabic being derived from the Hebrew root. The Greeks translated the term into psoriasis, indicating thereby a dry scall or scale—a word of Saxon origin, from "sceala," a rough surface.

נתק (netek). The Saxon word sceala, or scall, included two kinds, dry and moist. It is to the latter I now refer.

Like our ancestors, the Arabians had a common name (sahafati) for both; distinguishing one from the other by the term dry and humid. In the authorised version of the book of *Leviticus* the Hebrew netek is by mistake rendered "*dry* scall." On this Dr. Mason Good observes:—"The expletive *dry* does not occur in the original, and that נתק (netek) denotes humid scall rather than dry scall, is clear from the explanation contained in the Bible context, in which it is represented as a scall, seated on the hair or beard, and affecting its strength and colour, forming so thick a crust or scab that its removal by shaving cannot be accomplished, or ought not to be attempted. It is distinctly therefore a porrigo or scabby scall, and is thus verbally rendered in the Latin version of Tremellius and Junius," (*Study of Medicine*, Vol. V., p. 632. Fifth Edition.) Moreover, θραῦσμα, into which the LXX. render netek, literally means *a crust*, a term in use among us at present to express the peculiarities of a porriginous scab.

Numbers 4 and 5 have been treated at length in my previous essay, so the next to be remarked on is—נגע (nega), translated "plague," and rendered by the LXX. into ἁφή, a blow or bruise (ictus).

This was probably the meaning of Moses; and, although such an appearance might ultimately turn out to be harmless, yet examination was required for prudential reasons. We so often see cancer, for instance, popularly traced to a blow or bruise, that even while refusing to believe the disease to have so originated, we are compelled to admit some connexion between the two facts. This will to some extent explain how a blow or bruise might to the ordinary observer seem directly connected with the origin of malignant disease.

שחין (shechin), translated "a boil," rendered ἕλκος by the LXX., and (h)ulcus in the Vulgate, would seem to mean, in this part of the Levitical canon, a tumour resulting in ulceration. The same word is found in *Exodus* ix., 9, "shechin perech," "a boil breaking forth with blains," literally "burning carbuncle;" and again in *Deuteronomy* xxviii., 27, "shechin misraim," "the blotch

of Egypt," literally "the carbuncle of Egypt." These last, however, plainly refer to what we shall find classed under מכוה-אש (Mecutash) "a hot burning," literally a fiery inflammation" (*Lev.* xiii., 24).

This is rendered by the LXX. into *κατάκαῦσμα πυρὸς*, intense burning of fire; and the passage in which it occurs is thus significantly rendered by the Vulgate:—"Caro autem et cutis quâ ignis exusserit."

There can be no doubt as to the truthfulness of the above definition of anthrax in the form in which we now meet with it. The late learned Professor Osborne, of this city, in one of the most able papers ever written on the subject (*Dub. Quart. Journ.*, May 1858), demonstrated the plague at Athens, as described by Thucydides, to have been what we call sea scurvy; and Lucretius described this same plague by the name of "sacer ignis," (*De Rer. Nat.* vi., 1164). Eusebius, the ecclesiastical historian, gave the same name to the plague which raged in Syria, A.D. 302, and as we have seen, the translator of the Vulgate when engaged in rendering the Hebrew "mecutash," had the idea of fire prominently before his mind.

Doubtless each author of a classification will see a crop of objections to the above list. But it may be asked, under what class should we include the very common disease scabies? How many classifiers will agree here? Supposing all should agree, how will that disease, complicated with eczema, be classed? What diseases shall eczema itself be held to include? The fact is, that most varieties are classed in an arbitrary manner. A typical well defined case is selected as an example, and a drawing is made of it in the developed state of the disease. But the numerous cases which puzzle practitioners and classifiers are seldom described in plates as they occur at the outset, because they cannot be accurately named according to existing tables; while practical men find one given line of treatment applicable not only to several orders of one class, but to several classes themselves. That the eight names above given are not to be taken as "classes" is obvious; because by joining two or more in one the list may be further simplified, and hence, in a pathological, or in an anatomical sense, it is not the best classification. Homer's *Navy List* is accepted as a clear account of the Grecian ships, and of most important particulars concerning them. Even so, Moses gave the Hebrews a catalogue of cutaneous diseases, which we have seen is remarkably true to

nature, and is not open to the objections which may be urged against the best of our modern "classifications." It had the great advantage that as it was not based on science, truly or falsely so called, so it need not vary with the ever shifting sands of imperfect medical knowledge. It served to detect disease, to diagnose it, to treat it when curable; and to permanently separate the diseased from the healthy, when incurability was demonstrated.

In conclusion, I may refer the reader to the articles LEPROSY and MEDICINE in Smith's *Dictionary of the Bible* (1863); and among the numerous works therein noted I may name Shapter's *Medica Sacra* (1834), and Bartholini (Thom.) *De Morbis Biblicis Miscellanea.* This last curious treatise is to be found in Ugolini's *Thesaurus Antiquitatum Sacrarum* (Vol. XXX., p. 1,521), published in folio, at Venice, in 1765, and is classed Fag. W., 1-30, in the library T.C.D.

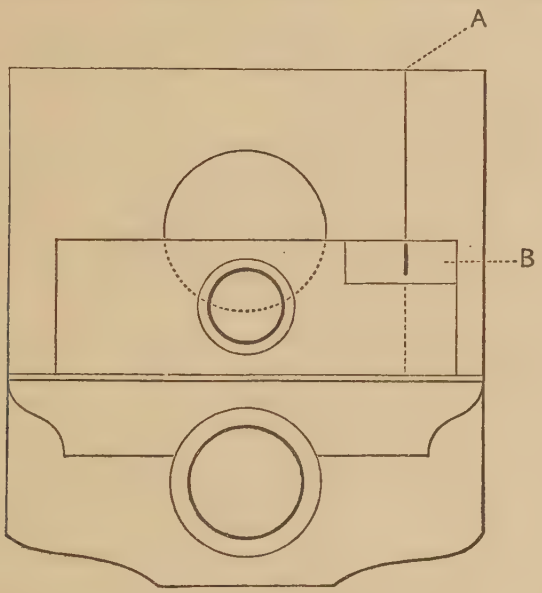
ART. XIII.—*A Simple Object-Finder for Students' Microscopes.* By THOMAS POWELL, L.R.C.S.I., Enniskean, County Cork; late Assistant-Surgeon H.M. Bombay Army; formerly Lecturer on Practical Anatomy in the Original (now Ledwich) School of Medicine, &c., &c.

DURING the last year I have been using a simple addition to the stage of my microscope, which acts as a most efficient object-finder, I find it most accurate with all powers up to the $\frac{1}{8}$-inch object-glass.

This diagram shows the arrangement, and represents the stage of a student's microscope as made by Smith and Beck. In order to use this finder with a microscope, it is necessary for the object-carrier to be well fitted, and move easily and accurately in the vertical direction. The object-carriers of all good students' microscopes are, I believe, sufficiently well fitted, and I find that of Messrs. Smith and Beck answers perfectly.

The finding line (A) is a fine black engraved line marked on the stage of the microscope, near its right margin, vertical to the object carrier, and parallel to its plane of movement at about one inch and two-tenths from the centre. A small piece of paper, or of gummed label (B) three-fourths of an inch long, and one-fourth of an inch wide, attached to the upper surface of the slide, where it overlaps

the finding-line, completes this simple apparatus. It is used thus:—An object being in the field to which it is desirous to recur. The



Mr. Powell's Object-Finder.

observer moves his head to the right, so as to get a view of the finding-line and label; he then with a pen makes a line on the label in apparent continuation of the finding-line. In order to find that object at any future time it is only necessary to place the slide on the stage, and adjust the microscope so that the object would not pass through the field unobserved, then push the object-carrier fully down, placing the slide so that the line on the label is again in apparent continuation with the finding-line, when by moving the object-carrier upward the object will be seen to enter the field.

In marking the line on the label it is necessary to observe whether the pen is "sighted" with one or both eyes, and to use either habitually, otherwise an inaccuracy in replacing the slide will result, which, being magnified by the power of the microscope, will prove material.

It has occurred to me that the finding-line might be marked on the object-carrier, or on a small plate attached to it. I have tried it so placed, but whether from habit or not, I find the line on the stage the most convenient. If, however, the object-carrier was imperfectly fitted I think it would be better to place the line upon it.

ART. XIV.—*Notes of a Visit to the Medical Institutions of New York.* By HENRY KING, A.B. M.B., Ch. L., Ex-Scholar, Senr. and Junr. Moderator T.C.D.; Staff Assistant Surgeon H. M. Madras Army.

HAVING recently had an opportunity of acquiring trustworthy information upon the medical institutions of the great city of New York, I hope an account of them may prove interesting to the profession at this side of the Atlantic. In these days, when many changes and some improvements are being made, or contemplated, in our system of medical education, the practice and experience of foreign countries may be valuable guides to us. The results of the studies and observation of our foreign brethren are always deserving of attention; but there are special reasons which make the customs and institutions of the United States more interesting to us than those of other foreign countries. It is no less true in medical matters than in politics that in America we see in action many practices to which we can discover here a tendency. We may therefore learn in what direction our efforts should be exerted, either to reform what appears to us to need improvement, or to obviate the tendency to undesirable results.

I purpose to describe briefly the system and state of medical education in New York; and, having premised some account of the sanitary condition of the city, to give details of the hospital and dispensary provision for the diseased and injured. In addition, I shall touch briefly upon the state of our profession in New York, and of its parasites, (as the "irregular practitioners" may be called), concluding with a few words upon the Sanitary Commission, without which a paper upon medical matters in the United States would be, in the present day, incomplete.

The present year is said to be the first in which the medical schools of New York have equalled, in the number of their students, the rival schools of Philadelphia.[a] In both cities the systems of medical education are the same; but in consequence of the concentration of the students in two institutions instead of their dispersion through four or five, the remuneration of the professors in Philadelphia is higher than in New York. They are thus enabled, in a

[a] The number of matriculated medical students in Philadelphia this year is 781—380 in the University of Pennsylvania, and 401 in Jefferson College.

great degree, to devote their undivided time and attention to their professional duties, undistracted by the details and anxieties of practice. No doubt this state of things is very satisfactory to the professors themselves in the "City of Brotherly Love," but whether it has the effect of rendering their lectures more instructive to their classes I have had no opportunity of judging. I should be inclined to prefer the combination of special study with the experience derived from general or special practice, to the former alone—more particularly in some of the subjects of medical education. The more active competition, (if healthy), among several schools than between two only may not be without advantage also.

The sole medical qualification is the degree of M.D., there being no educational distinction between physician and surgeon. There is not, as with us, a central examining and qualifying body, for whose approval each school prepares its candidates. In New York the Legislature has conferred upon each educating medical corporation the power of granting the degree of Doctor of Medicine. This privilege has been not long since conceded by the Legislature to the New York Homeopathic Medical College, and might, no doubt, be obtained by any other "pathists" who should think it worth their while to expend some energy and dollars in obtaining the legal right to dub themselves "doctors." The assumption of the title, indeed, without any legal right is attended by no legal penalty. The preference previously given to the "regular practitioners" by the law was abolished about the year 1840, when the statute regulating the practice of medicine was repealed, and *any person* was allowed to collect fees for medical services. It follows that not only the popular title of "Doctor," but even the legally-obtained M.D. is totally destitute of significance.[a] Any one, almost, may obtain it; and any one may assume without having obtained it. The conditions on which the genuine degree may be obtained are the same in all the schools of New York, (which shall be noticed individually hereafter), and may be stated in a few words. A candidate for the degree of M.D. must produce satisfactory evidence of having "studied medicine" under a respectable practitioner for three years; of having matriculated; and of having paid for two courses of lectures from each of the professors of whom the Medical Faculty consists (besides two sessions of Demonstrations and Dissections), whose

[a] In 1861 there were thirty-seven medical schools in the United States, each conferring the degree of M.D.

"tickets" he must exhibit. He must further hand in a thesis upon some professional subject approved by the faculty, composed, of course, by himself, and (generally) also written by himself. These preliminary steps taken, the candidate is examined separately and privately by each member of the faculty in his own special branch of medical science, for twenty minutes or half an hour. He is also liable to examination upon his thesis; and in some cases to a further test. The ordeal successfully undergone, the degree is conferred publicly, with no little ceremony, and in the presence of an admiring crowd of both sexes, assembled to hear the music and the speeches, which form an essential part of a Commencement.

The difficulty of the final examination is of course relative to the powers of the candidate; and it is therefore impossible for a stranger to estimate the value of the ordeal as a test of professional knowledge and skill. The examination being private, an inquirer is dependent for the means of forming an opinion upon his observation and knowledge of the men who have passed it, and on their own estimate of its nature. The latter, as might be expected, fluctuated between remote limits, some of my informants believing that it might be made very much more stringent with advantage; others, that it was more than sufficiently difficult already. Judging from the character of the New York graduates, so far as I have been able to observe it, I think there is good reason to conclude that, while the leading physicians and surgeons of New York are unsurpassed by those of any European city, and the great majority of second-class practitioners in the large cities and towns are fully equal to the corresponding class in these countries, the lower ranks of "country practitioners" are inferior in professional acquirements to our own, and might beneficially be excluded from regular practice, or compelled to qualify themselves more fully for it by a more rigid examination.[a]

However, whether the examination for degree be searching or the reverse, it is the only test to which the candidate is subjected—the only means possessed by the faculty of judging whether the

[a] Great complaints are made by the compilers of vital statistics of the difficulty of ascertaining the true cause of death, in consequence of the ignorance of scientific nomenclature on the part of the signers of death-certificates. This is no doubt partly due to the fact that druggists, &c., as well as regularly, but imperfectly, educated physicians, are legally competent to sign these certificates. We have heard a gentleman state, that in a town in Connecticut, with a population of 13,000, he has known one disease to appear in death-certificates under *six* different names—this being the result of ignorance on the part of the medical attendant, regular or irregular.

student has availed himself of the opportunities within his reach. Attendance upon lectures or hospital instruction is absolutely voluntary. A professor, his ticket once issued, lectures regularly in the appointed place, but never troubles himself to ascertain whether the members of the class attend or not. No roll is called; no questions asked. If a student takes out a ticket for a course additional to the two prescribed, which he can do without the payment of any additional fee, he receives a special honorary certificate, to which some importance and value appear to be attached. Beyond this, no encouragement to regular attendance upon the means of instruction is given by the schools. But an able lecturer—and the great majority of the professors in the New York schools are very able men—always commands an audience, not from his own class only, but from all the students of the city, with a sprinkling of practitioners besides. All lectures are open to the profession, and the privilege of attendance upon the best is freely used by crowds of attentive students. Although, therefore, no effort is made even to bring the medical horse to water, he does not fail to come of himself and drink, if the supply be copious and good. Nowhere have I seen larger, more attentive, or better conducted audiences than in the medical schools of New York.

Each student, at matriculation, names a "preceptor"—generally, but not necessarily, a professor of the school into which he is entering. This gentleman in most cases, we understand, receives a yearly fee, in return for which he either himself instructs the pupil, or provides for his professional instruction. Apprenticeship is unknown.

No evidence of regular attendance upon an hospital is required, beyond the certificate of having "studied medicine" for three years, which need not be signed by the physician or surgeon of an hospital. But this apparent laxity does not, in practice (any more than the liberty of neglecting lectures at will), operate unfavourably. The hospitals are well and regularly attended, and the teaching is careful and eminently practical. Cases are diagnosed by the students, under the superintendence of the visiting physician or surgeon, who elicits by examination the opinion of the former upon the nature of the case, as well as the grounds of his opinion; and also the treatment he would recommend, and the reasons for it. Three or four cases will be thus examined into on each visiting day, and three or four students specially, and the whole class generally, instructed practically in diagnosis and therapeutics. The

method is a good one, but tedious, and possesses no superiority over the system pursued in the hospitals in this city, where students receive charge of patients on admission, and during their continuance in hospital; taking notes of the cases, diagnosing and treating them, under the superintendence of the physician or surgeon.

In the schools not immediately connected with hospitals a system of clinical instruction has been introduced; first by Dr. Metcalfe, Professor of the Practice of Medicine in the University of New York, a gentleman of the highest eminence in his profession, and most deservedly popular amongst the students and all others who have the pleasure of his acquaintance, some in this city included. On certain days in each week, during the session, patients attend at these schools for advice. Three or four, the most suitable for practical instruction in diagnosis, are selected, and examined in detail, in presence of the class, by the professor. The students are thus taught how to elicit from a patient the information necessary for diagnosis and treatment. These cliniques, as they are called, are very instructive, and seem to be proportionably popular, being attended regularly by large classes of students, as well as, in some cases, by practising physicians—attendance being of course voluntary. The supply of ordinary medical cases, willing to submit to examination into their ailments before a large class, in consideration of receiving advice and a prescription, seems to be abundant. The clinique of Diseases of Women is, naturally, maintained with greater difficulty, but still is maintained with great success, at the College of Physicians and Surgeons at least, under Dr. Thomas.

The teaching in the New York medical schools appears to me to be *practical* in a very high degree. The system of instruction is adapted to making good practical physicians and surgeons, and the lectures are evidently directed to the same end.[a] No stronger proof of this can be given than the existence of a strong reaction in favour of more theoretical teaching. I have heard gentlemen, whose opinion is of considerable weight, express misgivings with reference to the intense practicalism of the instruction given. These would exclude students from hospitals, and other more practical parts of professional education, during the earlier years of their course; restricting them to anatomy—in the theatre and dissecting room—physiology, and similar preparatory subjects. They would render the entire course of the student more theoretical than at

[a] For example, I heard a lecture on Version, which was illustrated by the performance of the operation upon a dead subject, *per vias naturales*, with a real fetus.

present, leaving him to acquire practical skill and knowledge, chiefly *after* his final examination. This would be, to a considerable extent, feasible in New York, where a great number of hospitals and other medical institutions afford temporary employment and practical instruction to young graduates as resident physicians or surgeons, before entering upon the regular and permanent duties of their profession. But it is evident that this resource is limited in applicability, and would not justify the entire omission during the student's course of instruction directed to enabling him to practise with confidence immediately after graduation. I mention these opinions, not as approving them, but in order to illustrate the state of medical education in New York, and the feelings with which it is regarded in that city itself.

The fees are the same in all the schools, viz., five dollars (£1) at matriculation; fifteen dollars (£3) for each of the seven "tickets," amounting to £21 for each of two years; five dollars (£1) for each of two Practical Anatomy tickets, with one dollar for each "extremity" (or each subject—we forget which). The graduation fee is thirty dollars (£6). Thus the total expense of a medical education, as far as the school is concerned, does not exceed 260 dollars, or £52,[a] hospital instruction being altogether gratuitous. To these must be added the cost of a "quiz," (I am not sure of my orthography, never having seen this word, of unknown derivation, in print)—Hibernicé a "grinder," which amounts generally to thirty-five or fifty dollars a year. This private medical tuition is, as amongst ourselves, general, though not indispensable or universal. The classes range from twelve to fifty in number, meeting in some large room of an hospital or dispensary, with which the teacher (or one of the teachers, partnerships in this business being common) is connected. This connexion with a public institution, which is very general, enables the teacher to give his pupils the benefit of clinical instruction.

The supply of subjects for dissection is abundant—and the study of practical anatomy may be carried on without fear of a repetition of the celebrated "Doctor's Riot" of 1787. On that occasion some boys peeping through the window of the hospital,

[a] A pound sterling may be roughly calculated as equivalent to five dollars—supposing the United States currency to be in its normal state. A sum in dollars may, therefore, be shortly converted into pounds, with sufficient accuracy for ordinary purposes, by cutting off the last and doubling the remaining figures. This process is, in most cases, easier than dividing by *five*.

saw, with horror, the process of dissection, and ran to tell their parents. A serious riot ensued. The doctors fled for their lives, and took refuge in the prison, where their friends and the police succeeded in protecting them for a few days, until the popular excitement had subsided, and they were able to walk the streets once more in safety. It is said that the house of the English Consul, *Sir John* Temple, narrowly escaped being sacked, the mob supposing him to be a *Surgeon* Temple.

There are two weak points in the New York system, which I shall notice briefly before describing the schools individually. One is, the shortness of the period devoted to the teaching and the learning of a science and an art yearly increasing in complexity and difficulty. We have seen that the regulations require only three years study, preparatory to graduation. This is, unquestionably, altogether inadequate to the task which it is expected and supposed to fulfil. The most brilliant and industrious student will with difficulty, if at all, master, in three years' study, the multiplicity of details with which the well instructed physician's or surgeon's mind must be stored, besides acquiring the essential education of the eye, the ear, the touch, the *nose*. To the student of merely ordinary ability and application it will be impossible. In New York, however, the case is still worse than this, so far as the conditions of graduation are concerned; and too often, it is to be feared, in actual practice. The curriculum occupies but two of the three years required, and a year may be passed in the country before coming up to attend lectures, in study merely nominal or conventional.

Again, while a healthy competition among the colleges of a university, or among a number of medical schools preparing students for one central licensing body, may be, or may be made exceedingly beneficial to education, the competition of several corporations, each possessing a chartered right to confer diplomas or degrees, can scarcely fail to be unhealthy—to degenerate into a greedy scramble for fees, and to result in a lowering of the standard of graduation in some, and perhaps ultimately in all. That there is a tendency, at least, to this great evil in New York, there is reason to believe. We need not cross the Atlantic to seek for examples of the mischief which may arise from the morbid form of competition I have indicated. But, it appears that even more danger to the cause of medical education exists where, as in New York, five licensing bodies compete for students in

one city, than where, as with us, the rival corporations do not, generally speaking, come into immediate contact and competition.

There are in the State of New York six[a] chartered medical colleges, empowered to confer the degree of M.D. Of these, one is in Buffalo, in the north-western part of the State; four in the city of New York, and one in the neighbouring city of Brooklyn. A few words may be said about each of the last five.

The oldest of these is the *College of Physicians and Surgeons*, which, since 1860, is the medical department of Columbia College. The latter was chartered in 1754 as "King's College," being the fifth in the United States in order of time. Seven years previously (1747) the state of learning in the province was felt to be deplorably low, not more than thirteen of the inhabitants at that date having received a classical education. To remedy this it was determined to raise £2,250 by lottery for the purpose of founding a college. The building was completed in 1760—not, of course, where it now stands, but in the oldest part of the city, where the name "College-place" marks the site. The medical school which now forms a department of it, was not opened until 1807.[b] The first graduation took place in 1811.

The Faculty of Medicine consists of the president (who is also "Emeritus" Professor of Obstetrics); two other Emeriti professors; seven regular professors (one of whom teaches Medical Jurisprudence in addition to Obstetrics); the Professor of Military Surgery, a recent significant addition to the regular professorial staff; Professors "Adjunct" of Surgery and Obstetrics; a Demonstrator of Anatomy and his Assistant; Assistant Professors of Obstetrics, Physiology, and Surgery; and a Librarian.

The regular course of lectures opens in the middle of October, and continues till the second week in March. During the four weeks previous there is a "Fall Course" of lectures delivered by the professors on special subjects—such as (in the present year), abortion, meteorology as applied to hygiene, physical exploration of the eye, &c. There is a similar Spring Course, beginning in April. Of the "Cliniques" I have spoken before. There are five held at the college, and one elsewhere. Advanced students receive charge of obstetric "out-patients."

Two examinations of candidates for graduation are held annually—one in March, before the Spring Commencements; the other on the

[a] One of these has since become extinct.

[b] The first medical school in the United States was opened at Philadelphia, in 1764.

second Tuesday in September, for the Fall Commencements. The latter of the two required courses must have been taken out at this college; but graduates of other recognized schools, who have been three years in practice, and theological students, are admitted to examination on a "general ticket," on payment of the matriculation fee only.

With the intention of connecting this school with the New York Hospital more especially three prizes have been established, of 150, 75, and 25 dollars, awarded to the authors of the three best written reports of the clinical instruction of that institution during four months of the year preceding graduation. There are also prizes of 50 and 25 dollars for the two best graduating theses; and one of 100 dollars for the best series of preparations illustrating the anatomy and physiology of the larynx.

Of the 288 students during the Session 1863-64, 81 belonged to New York city; 69 to other parts of the State; 22 to the British provinces (including 1 from India); 14 to Massachusetts; 3 to Pennsylvania; and 1 was an M.D. of the University of Madrid. 63 were Bachelors, and 21 Masters, of Arts. 17 were already Doctors of Medicine.

Of the 62 graduates of 1863, 17 were from New York city; 19 from other parts of the State; 4 from the British Provinces; and 2 from Massachusetts. 15 were A.B.'s; 3 A.M.'s; and 2 M.D.'s.

The museum is quite unworthy of the oldest medical college in a great city. It is principally made up of private collections of the professors, used in illustration of their lectures. The preparations made by Dr. Dalton, the Professor of Physiology, are very beautiful and valuable, but the others are not worth a visit.

The Medical Department of the *University of (the City of) New York* was founded in 1837, but did not commence operations until 1840. The Faculty includes, or till lately included, the well-known names of Mott, Metcalfe, Bedford, Draper, Van Buren, &c., most eminent in the United States, and known in Europe. This school enjoyed an extensive Southern connexion; and before the breaking out of the present war, its pupils and graduates were more numerous than those of the other colleges in New York. In the year 1861, 129 medical degrees were conferred, while the number given the same year in the College of Physicians and Surgeons was 69. 64 were granted to students from the Southern states.

The Museum of the University School is a very good one, but has a neglected appearance. Bottles but half filled with spirit,

cases with cracked and broken glass, shelves disfigured with dust and cobwebs, betoken the absence of proper care. Professor Mott's collection is the largest of the component sections, including a vast number of preparations of tumours, benign and malignant, and a small but valuable ethnological case of crania. Next to his in extent and value is the private collection of Dr. Finnell, which does not, however, form a permanent part of the University Museum. The other professors' contributions assist to produce a result very far superior to the collection of the other College. There is a library of 5,000 volumes.

Commencement Day is in the first week of March. The conferring of medical degrees is a grand affair in New York, and deserves, perhaps, a brief description. The Medical Commencement of the University is held in the evening, in the chapel[a] of the university buildings, in Washington-square; the school itself is in a different part of the city. The Chancellor of the University enters, accompanied by the Medical Faculty (all arrayed in academic cap and gown), and begins the proceedings by reading a few verses from the Gospels—without uncovering his head—and offering up a short extempore prayer. He then reads out the names of the gentlemen who have been recommended by the faculty for the degree of M.D. These are called up, in classes of ten or twelve, to the platform, and receive the degree from the Chancellor, who pronounces a few Latin words, and delivers to each candidate a roll of paper tied with a ribbon. An attendant relieves each batch of graduates, as they descend from the platform, of these rolls, which do duty for the next set—a symbolical proceeding worthy of the "old country!" and illustrative of the fact that "sham" is inseparable from degrees in every land. Certificates of honour (for attendance upon extra courses of lectures) are next announced. Then prizes are handed to the successful candidates—the Mott Medals and Metcalfe and Van Buren Prizes. A Valedictory Address to the graduates is then delivered, the Chancellor pronounces a blessing, and the Commencement is over. Between the parts of the ceremony a band performs operatic or other music. This description, with little variation, would answer for the Commencements of the other Colleges of New York. Fifty-nine degrees were conferred by this school in 1864.

[a] "Churches" in New York are available (for a consideration) for business much more secular than Commencements. The Roman Catholic and Protestant Episcopal communities are exceptional in restricting their places of worship to their proper object

The New York Medical College has become defunct. It held its last Commencement on the 7th of March. It never enjoyed much favour with the profession, partly in consequence of the not unnatural jealousy with which a new school is regarded by the *alumni* of older ones; partly, I believe, on account of the personal unpopularity of one of its promoters; and partly because of its supposed proclivity to flirtation with homeopathy and kindred "arts." It was said that homeopathic practitioners, actual or intentional, experienced no difficulty in graduating at this college; but this may have been a slander.

The school was chartered in 1850, and the first Commencement held in March, 1851. Dr. Horace Green, the advocate of the application of caustic solutions to the bronchi, and even lower depths—a gentleman who honoured Dublin with a visit some years ago—and Dr. Carnochan, said by some to be the most skilful operator in New York, were the founders of the new college. After a few years it came near collapsing—Dr. Green having withdrawn from active connexion with it—and was taken in hand and galvanized into renewed vitality by some of the younger members of the profession, ambitious, and anxious to distinguish themselves. However, last March it died, regretted by few. In its agonies it conferred degrees on fourteen gentlemen, of whom seven were from New York, four from Cuba, two from Germany, and one from Massachusetts.

A small "Charity Hospital," containing thirty beds, was attached to this college.

The youngest and most flourishing of New York medical schools is the *Bellevue Hospital Medical College*, which was chartered in March, and began its work of education in October, 1861. The Act of Incorporation was granted on the application of the Medical Board of the Hospital, together with the recommendation of the Commissioners of Public Charities and Correction. The plan was stated to be the combination of "clinical and didactic teaching, by engrafting a medical college upon a large hospital," "after the examples of the most distinguished European schools." The school is situated in the grounds of Bellevue Hospital, in which ten or twelve thousand patients are treated annually—the average number in the house being between 800 and 1,000[a]—besides 1,000 cases, mostly chronic, in Blackwell's Island, between which and Bellevue

[a] Five hundred births take place annually in the hospital.

communication is easy, regular, and free to students, and which is under the care of the same medical staff. Thus the students are able, without inconvenience or loss of time, to devote three hours daily to hospital instruction.

The Medical Faculty consists of a President, a Secretary, and thirteen Professors (all of whom but three are connected with hospitals as visiting physicians, or surgeons, or obstetricians), besides the Demonstrator of Anatomy and his Assistant; the "Prosector" to the chair of Surgical Anatomy; and an assistant to the Professor of Chemistry and Toxicology. A chair of Orthopedic[a] Surgery is filled by Dr. Sayre; and Dr. Hamilton, well known in this country through his work on *Fractures and Dislocations*, is professor of those subjects in combination with Military Surgery. The regular term begins in October and ends in March, being preceded by a preliminary term of four weeks.

The number of students attending this school has increased, is increasing; and, we may add, in the opinion of some of the friends of its older rivals, ought to be diminished. In 1862–63, the total was 182; in 1863–64, 307. In 1863, 41 degrees were conferred; 97 in 1864; and the Commencement of this year, held in the huge opera-house, called the Academy of Music, was so attractive to the beauty and fashion of New York that I failed to effect an entrance, and retired in disgust to the homeopathic Commencement which was proceeding simultaneously in a Unitarian church in Broadway.

Of the 307 students of the present year 107 belong to the State of New York, 34 to the British American provinces, 24 to Pennsylvania, 5 to Cuba, and 1 to Persia. Of the 41 graduates of 1863, 15 were from New York, 6 from the British provinces, and 1 from Pennsylvania. Three were already doctors of medicine—two from Wisconsin and one from Arkansas; only one gentleman (from Massachusetts) was an A.M. In the absence of degrees in arts this school contrasts unfavourably with the others. For this deficiency cushioned seats, showing the march of intellect in the theatre, make poor amends.

Though not falling regularly within the scope of this paper, the *Long Island Medical College* deserves a passing notice. The city of Brooklyn is separated from the island on which New York is built by the "East River," which connects the Sound between

[a] Cannot some high medical authority rid us of this dreadful word, which is a disgrace to the nomenclature of a "learned" profession?

Long Island and the mainland with the Hudson, or North River. It is, in population, the third city in the Union, the inhabitants numbering, in 1860, 266,664. Here the Long Island College Hospital claims to have inaugurated, in the United States, the connexion between a medical school and an hospital, the former being within the hospital buildings, in which nearly 10,000 patients are treated annually.[a]

There are seven professors in this school besides Dr. Hamilton (who divides his allegiance between it and Bellevue), Professor of Military Surgery, Hygiene, Fractures, and Dislocations; who has, however, been absent during the last two sessions, holding a high staff appointment in the United States army. One peculiarity of this college is, that a council of physicians, who do not take part in the medical instruction of the students, have charge of the examination for degrees. Another is, that the regular term begins in March and ends in July, thus affording the means of medical education during the Spring and Summer months. The fee for graduation is only twenty-five dollars.

Fifty students matriculated in 1863; 18 from New York, 7 from Massachusetts, 6 from Pennsylvania, 1 from the British provinces, and 1 from Scotland. Sixteen graduated; 3 from New York, 4 from Pennsylvania, 2 from Massachusetts, and 1 from Scotland.

Before describing the hospitals of New York—as well those which assist in medical education as the others—a brief sketch may be given of the city from a sanitary point of view.[b]

The island of Manhattan,[c] on which New York is built, is $13\frac{1}{2}$ miles in length, and its average breadth is one mile and three-fifths. It contains 14,000 statute acres. While London may be roughly estimated to cover a tract of 11 miles square, or 121 square miles. New York extends over a space of 12 miles by 2, only, or about

[a] Besides the Long Island College Hospital, Brooklyn contains the City Hospital, with accommodation for 350 patients, and the King's Co Hospital, in which more than 2,000 are treated annually. Between two and three hundred insane patients are under treatment in the King's Co. Lunatic Asylum.

[b] I was unable to obtain copies of the *City Inspector's Reports* for 1862 and 1863, which contain much valuable information on this subject.

[c] This word is said to be a corruption of the Indian *Manhachtanienks*, of which the ill-omened interpretation is, "The place of drunkenness." Heinrich Hudson met the Indian sachems here in 1609, and the latter worthies got very drunk in honour of the occasion.

24 square miles. The surface of the island lies from 5 to 150 feet above high water mark. The Hudson, or North River, separates it from the state of New Jersey; the East River from Long Island, and these waters are connected by the Harlem River, which bounds the city on the north. The entire of the island is not yet covered with buildings, but at the present rapid rate of increase of population many years will not elapse before the city limits will include no ground unoccupied by streets and houses. In 1860 nearly one-half of the population dwelt north of Fourteenth-street, which is $2\frac{1}{2}$ miles from "the Battery," or southern apex of the island.

The population, during the early and colonial life of the city, grew with extraordinary slowness. In 1646, 1,000 inhabitants occupied 200 houses, not nearly filling the space between the Battery and Wall-street. The town wall, which named this now well-known street, was not built till 1653. In 1698 the population amounted to 4,300. In 1741 there were 1141 houses only, 129 of which stood on the west, or Hudson, side of Broadway. In short, it took 160 years for the population to reach the 23,000 which it had attained when the British left. At the last census (1860) the population was 813,668; having increased 298,121 in ten years.

The extent of the island has been increased at various times artificially, in two ways—by reclaiming ground from the rivers, and by filling up ponds, lakes, and marshes, which occupied a good deal of the area. This fact is important as affecting the sanitary condition of the city. The present Greenwich-street was part of the Hudson River a hundred and twenty years ago. The East River has been considerably displaced at the other side. The site of Fulton Market was a marsh in the Dutch times, called the Vly (or Valley) bounded by the higher ground of Gold-street. The Kolk (or Collect) was a lake of great depth, filled up, and now covered by Grand-street, Canal-street, and the City Prison, commonly called (from its Egyptian style of architecture) "The Tombs." A great deal of this made ground, in the lower part of the city, is either badly drained or incapable of drainage. A tide higher than the average fills the basements and cellars with water. In many streets, under these circumstances, a dry cellar is scarcely known; 30,000 persons live in such places, and the rate of mortality is raised appreciably by this state of things. Yellow fever and cholera epidemics reap their richest harvests here. Nor is the evil of insufficient or neglected drainage confined to the lower and older parts of the city. Up-town, when new "blocks" are being prepared

for building purposes, marshy ground, ten and even twenty feet below the level of the street, is not unfrequently filled up without any provision being made for the escape of the surface water which must gravitate to the bottom of the pervious filling. In some parts where this practice has been followed, the character of the endemic disease has been changed—but not for the better. In the townships (as we perhaps might call them) of Yorkville and Harlem (six and eight miles respectively from the Battery), intermittent fever has been nearly driven out by the filling up of marshy spots, and the occupation of the ground by dwellings; but bilious and other fevers have taken its place, and appear likely to increase in number and virulence.

Several causes contribute to produce the inefficient drainage and sewerage of New York. One is a want of system on the part of the controlling city authorities. Sometimes new streets are laid out and paved before the sewers have been constructed. Sometimes, when they are made, they are several feet above the level of the places they are intended to drain. Partly from this cause, and partly from the cheap-contract system which prevails extensively under the city government, and is closely akin to corruption and peculation, sewers are badly constructed at the outset, and the paving of the streets has to be continually ripped up for the purpose of repairing the drains. Many of the city sewers were built in 1838, and require to be re-constructed already. Again sanitary measures (and all other measures) in New York are made party or pecuniary questions, and discussed without any reference to their merits. Hence bills calculated to place the sanitary control of the city in the hands of those best qualified to exercise it are defeated on political or personal grounds. The City Inspector, in his Report for 1861, goes out of his way to abuse a measure of this nature, *because* it proposed a sanitary board of seven members, the majority of whom were to be physicians! England, he informs us, "gives to the unprofessional classes the controlling voice in its sanitary affairs, having arrived at the propriety of this conclusion by many lessons of experience!"[a]

[a] It is needless, in these pages, to dwell upon the importance of sewerage and drainage to health. To improvements in these points is chiefly, if not solely, attributable the improvement in the public health of London since the 16th century. *Then* the average duration of life was 20 years, and the annual death-rate 50 in 1,000; now these numbers are 37 and 25. So, also, Paris in the 14th century lost 1 in 20 of her population annually; in 1860, 1 in 35.

Intramural interments are forbidden—at least, an Act passed in 1850 prohibits burials below Eighty-sixth-street, except in vaults made previously to that date. All bodies deposited in these must be reported weekly. It follows from these provisions, and the fact that the "city" limits are those of the island, that New York affords unusual facilities for the exact ascertainment of the death-rate. The cemeteries are, of course, separated from the city by water, and no corpse is allowed, under a penalty of £40, to pass the ferries without a permit, which implies registration of the death, and its cause. In fact New York is the only city in the Union in which *every* death occurring within its limits is recorded; unless we except Philadelphia—the Legislature of Pennsylvania having recently passed an Act requiring careful registration of deaths. The situation of the latter city, however, is less favourable to this than the insulation of New York.

Vaccination is gratuitous, but very much neglected. The subject is at present occupying a good deal of attention, and it is proposed to invoke legislative interference. Compulsory vaccination, it is said, would not be practicable in America; but some remedy is absolutely required to prevent the spread of variola, and avert a catastrophe similar to that of 1720, when that disease swept away 549 persons—one-fifteenth of the population—in two months. Compulsory vaccination of immigrants has been suggested; and also to require candidates for all public offices to exhibit a certificate of vaccination. As yet, however, nothing has been effected.[a]

The streets in the old Dutch part of the city are, many of them, narrow and irregular. The terrible fires of 1836, and others which occurred about ten years later, removed a good deal of the ill-ventilated quarter, and the newer parts leave nothing to be desired so far as the laying out of the streets goes. In fact, the street-system of New York is perfect, both for sanitary purposes and for general convenience; however utterly "un-English"—to use a favourite cant-word of the present day—it may be, and how much soever English Special Correspondents may sneer at "the city laid out like a gridiron." The avenues, numbered from First to Twelfth,[b] run north and south (roughly speaking), 100 feet in

[a] One of the medical societies has lately been investigating the alleged effect of the saracenia purpurea in aborting variola. The result is unfavourable to its claims; though recently instances of its successful employment have been reported in the *Lancet*.

[b] Avenues A, B, C, and D, are built on ground reclaimed from the East River.

width, and 800 feet apart. The streets cross these at right angles, at fixed distances of 200 feet, and generally 60 feet wide. Occasionally a street of 80 or 100 feet occurs, as Fourteenth, Twenty-third, Thirty-fourth, &c., where Broadway intersects the several avenues. They are numbered from First-street (two miles from the Battery) up to One Hundred and Fiftieth. The width and regularity of these thoroughfares ensure complete ventilation; and the trees planted along many of them contribute further to the purification of the atmosphere.

Sixteen parks, or squares, form the "spiracles" of New York. Most of them are public property, and open freely to all. The greatest of these is the new Central Park, on which no expense is spared, over £1,460,000 having been laid out upon the purchase and ornamentation of the ground up to January, 1863. This splendid park, which, when completed, will be the finest in the world, is free to all; and the "cars" running on those avenues which touch it carry passengers at twopence halfpenny from the heart of the business part of the city. The area of this park is 842 acres; of which 542 are disposed in lawns, shrubberies, &c. The ponds, lakes, ornamental waters, &c., occupy 29½; and the Croton Lake and old reservoir, 142. Besides these, 94 acres have been used for carriage drives, bridle-ways, and foot-paths, which comprise in the aggregate a length of drive and walk of upwards of 30 miles. The park was visited, within the year 1863, by upwards 4,000,000 persons.

In water supply—a matter of no secondary importance to the sanitary condition of a city—New York is said to be superior to any city in the world, except Rome.[a] Before the completion of the Croton Aqueduct the supply of water was scanty and precarious; it is now ample and unfailing. This great aqueduct, which conveys more water than any in the world, and is only two miles shorter than the longest—the Julian at Rome—was begun in May, 1837, and brought water into the distributing reservoir on the 4th July, 1842. It is 40¼ miles in length, 4 feet 9 inches wide at bottom, 7 feet 5 inches at top, and 8 feet 5 inches high. Its fall is 13½ inches in the mile. It passes through nearly 7,000 feet of solid rock, crosses 25 streams, besides brooks; and finally, the Harlem river,

[a] According to a report made by a Commission of Inquiry, relative to the waters of the Lhuis, the normal quantity of water for a town is 150 *litres* per head of the population per day. Rome receives 944; New York, 568; Carcassone, 400; Besançon, 246; Dijon, 240; Marseilles, 186; Bordeaux, 170; Genoa, 120; Glasgow, 100; London, 95; Paris, 90.

by a bridge 1,450 feet in length, and 100 in height, having 8 arches of 80 feet span, and 6 of 60. The total cost of this great work was £1,800,000.

This aqueduct discharges in 24 hours 60,000,000 gallons. The capacity of the receiving reservoir is 150,000,000 gallons; of the distributing reservoir, 20,000,000. The quality of the water supplied is excellent, for all household purposes, and the water-rate unoppressive. The house of a respectable professional man, or merchant, in a respectable street, would be charged £2 a-year for an unlimited supply.

The climate of New York is exposed to violent extremes of heat and cold. In the later Summer months the heat, though not thermometrically so high as the intertropical, is almost equally oppressive. I have known residents of the East Indies suffer even more from the sultry heat of New York than from the Indian sun. "Sunstrokes," also, seem to be more frequent than in the East; but this is in some measure due to the less degree of precaution against the effects of the sun, in dress and avoidance of exposure, taken in the western hemisphere. The following tables, though not including the last two years, will show the meteorological circumstances of New York:—

Summer Mean Temperature.

Year	June	July	Aug.	Sept.	Mean
1854	71°	79°	75½°	66°	72¾°
1855	69°	78°	74°	69°	72½°
1856	70°	77°	71°	68½°	71½°
1857	66°	75°	72°	64°	69¼°
1858	72°	74°	72°	67°	71¼°
1859	68°	73°	72°	62°	68¾°
1860	71°	75°	72½°	66°	71½°
1861	71°	74°	73°	69°	72°
Mean of 8 years,	69¾°	75½°	72¾°	66½°	71°

Winter Mean Temperature.

Year	Dec.	Jan.	Feb.	March	Mean
1853–54	33°	30½°	30°	34½°	32°
1854–55	29½°	32°	23°	34°	30°
1855–56	34°	20°	24°	32°	27½°
1856–57	32°	20°	36°	33°	30¼°
1857–58	39°	42°	26°	36°	38¼°
1858–59	34°	30°	35°	46°	36¼°
1859–60	30°	32½°	30°	43°	34°
1860–61	29°	28°	37°	40°	33½°
Mean of 8 years,	28¾°	29½°	30°	37¼°	32¾°

Mean for Years.

	1854	1855	1856	1857	1858	1859	1860	1861
Height of Barometer (in.)	29·96	30·00	29·96	29·89	29·89	29·92	29·89	29·90
Temperature (deg.), .	52½°	52¾°	50°	50¾°	51°	51½°	52½°	53°
Temp. of Evaporation, .	47½°	47°	44°	45°	44°	44°	46°	47°
Inches of Rain and Melted Snow, .	36	57	46½	57½	50	50	48¼	50¾

In the Winter of 1859-60, the lowest point reached by the mercury was 1° in February. The barometer fell to its lowest point of the year 1860 (29·09 in.) during a great north-east snow-storm on February 18, and attained its maximum (30·50) on the 6th January. Its highest monthly range was in September; its lowest in March. The thermometer rose to its highest on the 29th June 94° in the shade, and 138° in the sun. During this Summer only 12 deaths from "sunstroke" were reported; less than had occurred in any year since 1850. In 1852, 211 deaths took place from this cause, almost all aliens.

In the Winter 1860–61, the thermometer fell to—10° (on the 8th February), being the lowest degree in 7 years. In twelve hours on this day the thermometer fell 50 degrees, the barometer rising 1 inch

during the same time. The highest Winter temperature was 70°—on the 28th February, 1861. On the 21st March 12 inches of snow fell. The greatest Summer heat of 1861 (in the shade) was 95°, on the 3rd August.

The special causes which tend to raise the death-rate in New York are three: the almost unrestricted sale of intoxicating liquors, the over-crowded state of tenement houses, and immigration.[a]

Of the first cause it is only necessary to say, that the City Sanitary Report for 1861 states that there were, in that year, 11,000 grog-shops in New York, the population being about 820,000. The laws with regard to licensing these sources of disease and death are practically disregarded; and a considerable revenue, which might be derived from limiting and controlling them, is lost to the city. At that time they contributed to the municipal coffers little more than £1,400 annually.

The law does not at present interfere with the tenement houses, although their terribly crowded state is a fruitful cause of disease. To it is attributed the increase of typhus and typhoid fevers in 1863. Nor can we doubt the sufficiency of this cause, when we know that the principle on which these buildings are constructed is to obtain the greatest possible number of rooms from a given limited space. Some of these tenement houses occupy the entire "block," air and light penetrating to the inner apartments only through the passages from the outer door! Our gregarious countrymen crowd into these noisome dwelling-places, and thence arises a good deal of the mortality by which they increase the death-rate of the city.

The Sanitary Report for 1860 estimates that, of the 104,900 immigrants of that year, 50 per cent. remained in the city. If, as there is good reason to believe, the mortality amongst aliens is higher than amongst natives, the ingredient of 52,000 immigrants in a population of 813,688 will exercise no unimportant influence upon the death-rate of the city. The preponderance of alien mortality over native is especially observable in the infant population, more than two-thirds of the infant mortality being of foreign origin. For instance, in 1861, of 13,614 deaths of children—or, more properly, of persons under twenty-one years of age—the nativity of the parents is given in 9,427 cases. Of these 8,339 (or 88½ per

[a] To these may be added the fact that many deaths by accident occurring outside the city, as by drowning in the rivers, &c., are credited to the city—the bodies being brought in, and there registered.

cent.) were of foreign parentage. Absolutely, the mortality of the immature alien population is represented in the Sanitary Reports as frightfully high. In 1860 the deaths of immigrant children under five years of age bore to the living the ratio of $2\frac{2}{3}$ to 5; of those under two years the ratio $3\frac{1}{2}$ to 5. The deaths under five exceed in number those between the ages of five and sixty. The ratio of infant to adult mortality in New York is 1 to 60; while in Philadelphia, where there is little or no immigration, it is 1 to 65.[a]

Two more facts illustrate the effect of immigration upon the death-rate. In 1847 1,396 deaths occurred from typhus fever introduced from Ireland. Again, in June, 1859, 800 Mormons landed at Castle Garden, of whom 700 went westwards immediately. Of the remaining hundred—half of whom were children—80 died within three weeks, were buried at the public expense in the "Potter's Field," and their deaths credited to the city.

Notwithstanding all the drawbacks now mentioned, New York is said by her medical partisans to be a healthy city. The mortality is stated to be only a very small fraction above that of London (where there is no immigration), and to be below that of Paris. On the other hand, it was stated in the *New York Herald*, some months ago, that a "Citizens' Association," recently established for purposes of municipal and sanitary reform, having consulted "a number of leading physicians" with reference to the public health, were informed that the deaths in the city during 1863 were 25,196, or 1 in 35 of the population; whereas in Philadelphia, Boston, Newark, and Providence the proportion was 1 in 43; and that the rate of mortality is still lower in London and Liverpool. On what data these figures are based does not appear. The Report for 1860 gives 22,710 deaths in 814,254 inhabitants, or 1 in 36, which agrees pretty closely with the former part of the above statement. The same authority *asserts* that the mean duration of human life is $3\frac{1}{2}$ per cent. higher in New York than "in the cities of Europe." The Report for 1861 informs us that the mortality remained nearly constant from 1851 to 1861 inclusive (being 22,117 in this year), although the population had increased in that interval by 300,000. In 1861 the deaths were less by 472 than in 1853, which would seem to show that the sanitary condition of the city is at least not deteriorating, whether its normal standard be high or low. But

[a] But 1 to 60 in Buffalo; so that we cannot attach much importance to these facts with reference to the influence of immigration upon infant mortality.

the comparison of these two years gives us this fact also, that at least one-third more children, under one year of age, died in 1861 (the total being 6,189) than in 1853. I regret that I have not data at my disposal to enable me to compare the sanitary condition of New York with that of other large cities.

We come now to the hospitals of New York, general and special. The oldest of these is the *New York Hospital*, situated in Broadway. This institution received a charter from George III., in 1771; and a plot of ground having been purchased—in the country then, in the heart of the business part of the city now—the first stone was laid in 1773. The nearly-completed building was burned down in 1775; and the outbreak and continuance of the revolutionary war prevented its restoration for sixteen years. In January, 1791, patients were first admitted. A branch establishment for lunatics was opened in 1821, at Bloomingdale, a few miles "up town" from the original hospital. The buildings of both have received important additions since 1852, by means of legacies, donations, and loans; 165,000 dollars were supplied from private sources between 1852 and 1862. The New York Hospital can now accommodate 300 patients.

The current expenses of the establishment are met, principally, by the revenue derived from pay-patients; with a very trifling exception it has no fixed income. Those patients whose means allow pay ordinarily four dollars a-week—a sum less than the average cost of their board, exclusive of medical aid, rent, and expense of maintaining grounds and buildings. Some pay at a higher rate; and since 1859 female pay-patients are charged but three dollars. A proportion of cases, varying from one-third to one-half of the whole, are received gratuitously, as unable to contribute to the cost of their support. The ordinary receipts during 1863 amounted to 55,469 dollars, of which 14,173 was paid, by the public, for board of soldiers, and 23,063 for board of seamen; the remaining 17,841 having been contributed by pay-patients. The expenses exceeded those receipts by 25,650 dollars.

In consequence of the situation of this establishment, a large proportion of surgical cases and accidents are received. Thus, of 373 deaths occurring in 1863, 158 were the subjects of coroners' inquests; of 2,091 surgical cases, 880 resulted from burns, mechanical injuries, and sudden casualties. The varied nature of these is apparent from an analysis of the causes of the 158 deaths investigated by the coroners: 19 were railroad accidents; 24 falls from

buildings, &c.; 19 burns or scalds; 10 run over; 2 suicides; 28 cases of stabbing, gunshot wounds, &c.; 13 *coup de soleil;* and 43 unclassified.

Incurable cases, except of this nature, are not admitted, nor are cases of "contagious diseases."

The general results of treatment in 1863 were not so favourable as in the preceding five years; 346 remained from 1862, and 2,843 were admitted, making a total of 3,189 treated. Of these 1,919 were cured, 421 relieved, and 373 died—of whom 215 died from natural causes; of the total treated 6·82 per cent. died. Of causes of death 47·50 per cent. were surgical, 52·50 medical. Of all "discharged" (including 7·26 per cent. deaths) 67·55 per cent. were cured, besides 15.20 relieved. The average daily sick during the year was 265·96. As regards nationality, of 2,843 individuals treated, 1,053 were natives of the United States, 923 of Ireland, 320 of Germany, 161 of England, 55 of Scotland.

The working medical staff consists of four visiting and two house physicians, six visiting and two house surgeons. Clinical lectures are delivered during the Winter months, free to all without fee. A library of 7,000 volumes is attached to the hospital, to which 635 dollars of the year's expenditure was devoted in 1863; and a good museum, which received 621 dollars.

The *Bloomingdale Asylum for the Insane* is, as has been mentioned before, a branch of the above, and is managed by a committee of six of the Board of the New York Hospital. It was opened in 1821, and led the way, in the United States, in the improved moral and medical treatment of the insane. The Legislature granted £2,000 a-year for a term of years, by mortgaging which a sum was raised for the purchase of land and erection of buildings. The surplus income of the parent hospital was also devoted to this one. Improvements recently made in the buildings have rendered possible a better classification of female patients, of whom there are now thirteen classes. Patients were not at any time received gratuitously to any considerable amount, though insane poor were, for many years, admitted at a low rate, which was paid by the towns or counties to which they belonged. When public asylums were established in New York and Utica the latter practice also was abandoned. We are beginning to feel, in these countries, a want which this institution supplies—the bringing of the best treatment of the insane within the reach of persons of moderate circumstances.

Of 53,384 dollars received in 1863, 53,121 was expended upon the board of patients. The expenditure exceeded considerably the income in both these institutions; and a renewal of the State grant is solicited and urgently needed. This would enable the asylum to receive the full number of patients which it is capable of accommodating, namely, 300; whereas, in 1853, the total treated amounted to 272 only—157 remaining from 1862 and 115 admitted—124 males and 148 females. Of 14 deaths, 5 resulted from exhaustion due to maniacal excitement, 3 from phthisis, 3 from general paralysis, 2 from old age, and 1 from epilepsy.

We give, for comparison with similar institutions in this country, a table showing the state of this asylum, and the results of its practice during fifteen years:—

Year	Admitted	Total	Discharged and Died	Recovered	Improved	Not improved	Died	Remaining	Average Number
1849	95	214	111	44	33	13	21	103	112
1850	97	200	90	40	15	7	18	110	110
1851	95	205	83	43	20	9	11	122	114
1852	104	226	107	47	25	15	18	119	117
1853	135	254	130	49	27	32	22	124	133
1854	122	246	119	48	29	16	26	127	126
1855	107	234	107	52	13	23	19	127	127
1856	134	261	117	54	27	17	19	144	140
1857	128	272	126	49	37	25	15	146	141
1858	112	258	113	34	34	34	11	145	146
1859	138	283	131	55	32	26	18	152	152
1860	150	302	147	50	46	22	29	155	159
1861	111	266	115	42	36	18	19	151	154
1862	117	268	111	48	24	19	20	157	148
1863	115	272	130	53	47	16	14	142	151

Bellevue Hospital is by far the largest and most important in the city. It can accommodate 1,350 patients, and all gratuitously. It

was opened in 1816, as an hospital for the sick and insane poor, and also as a penitentiary and almshouse. The latter departments were subsequently removed to Blackwell's Island (in the East River), which, containing 120 acres, was bought by the city for £6,000, in 1828.[a] At a later period (1839) the lunatics were removed to the new asylum, built also on the island. In 1856 the hospital buildings were greatly enlarged; and in 1862 we find that a sum of 11,876 dollars was expended upon the edifice.[b] This and all the other institutions mentioned above are under the control of the Commissioners of Public Charities and Correction, and supported by public money. The expenses of the hospital in 1862 amounted to £21,400.

The Commissioners' Reports for the last two years give in the following results:—

Year	Remained	Admitted	Born	Total	Discharged	Died	Remaining	Total	Average Daily No.	Average Daily Cost
										c. m.
1862	702	4,406	393	5,501	4,267	608	626	5,501	754	25 7
1863	626	6,600	419	7,645	6,021	864	760	7,645	838	24 7

Many of the admissions during these two years were soldiers, the Government of the United States having made arrangements with the hospital authorities for their reception. Between July and December, 1862, for instance, 2,139 soldiers were received, the wards containing from 200 to 700 of them at a time.

Of the admissions, in 1863, 1,756 were natives of the United States (exclusive of 419 *born* in the house), 4,151 were Irish, 518 German, 276 English, 125 Scotch; of 50,000 admitted in ten years more than four-fifths were of foreign birth.

The principal causes of death were:—

[a] The penitentiary contains 1,736 cells, with workshop and offices; the almshouses have accommodation for 2,000 paupers.

[b] Some interesting memorials of the Revolution are preserved in this building. Let into the wall of the entrance-hall is the flagstone on which Washington stood when taking the oath of office as first President of the United States. On the railing now in front of the doorway he rested his hand while delivering his inaugural address. The weather-cock was removed from the old "Federal Hall" in Wall-street, and dates from 1700.

Year	Phthisis	Bright's Disease	Typhus	Typhoid	Puerperal Fever and Obstetrical cases	Marasmus	Coup de Soleil	Delirium Tremens	Coroners' Cases
1862	147	50	5	15	5	38	—	—	—
1863	129	75	92	12[a]	6	—	18	14	248

In the latter year the proportion of deaths to treated was 11 per cent. The mortality was 1 in 76 obstetrical cases (455); 1 in 3·7 "police and accident cases" (of which the number was increased by the July riots); 1 in 9·5 infants born and treated; and 1 in 4·27 cases of typhus and typhoid (526). The high rate of mortality in these last is attributed to the late period of the disease at which the patients were brought to hospital. Of the 123 who died, 50 sank during the first six days after admission. In 476 cases treated longer than six days only 1 in 6·5 died. The riots, and the discharge of sick and disabled men from the army, as well as the prevalence of typhus, contributed much to raise the death-rate in this hospital during 1863. The warden states that, deducting incurable and coroners' cases, the mortality is very little over 4 per cent.—"the very best result ever obtained in hospital practice."

The increase of typhus, and its spread from its own wards into other parts of the house, attracted observation and led to a good deal of discussion. Five of the resident medical staff were carried off by this disease. The medical officers, in their report, attribute the mischief to deficient ventilation, asserting that in Summer, when the windows are open freely and continually, typhus is less prevalent than in Winter, when they are kept shut,[b] and though foul air can escape, fresh air cannot enter. As a remedy they propose the erection of one or more wooden pavilions on one of the islands—one-story buildings, accommodating fifty patients in each, and isolated from all other sick. The warden, on the other hand (not, however, a medical man), strenuously defends the ventilation, which is, according to him, incapable of improvement, pointing to

[a] In another part of the Report I find the total deaths due to typhus and typhoid stated as 123. Some of these returns are so carelessly prepared, and many so carelessly printed, that I can with difficulty classify the causes of death. What does "marasmus" mean as a cause of death?

[b] The number of cases was greatest in December (65), in which month especially the disease spread into other wards, "and those amongst the best ventilated and open."

the fact that the *mortality* from typhus is *less* in the Winter months. When the buildings were being enlarged, in 1854–55, a Committee of Ventilation was appointed, and the architect had visited various institutions in Europe in order to examine into their systems of ventilation. His remedy is the same as his opponents'—isolation of fever cases. I could detect no olfactory sign of defective ventilation in any part of the hospital; and the fever ward was especially airy and sweet. Ten visiting physicians and ten visiting surgeons, assisted by eight house physicians[a] and six house surgeons,[a] perform the active medical duties of the hospital. The former serve in turns, and gratuitously; the latter receive quarters and about £50 a-year each. The wards and the clinical instruction, which is most careful and valuable, are free to students; the number of these registered as attending the hospital last Winter was 492—202 belonging to the Hospital Medical College; 88 to the College of Physicians and Surgeons; 39 to the University School; 7 to the New York Medical College; 36 to the New York Homeopathic Medical College; 5 to the Metropolitan Medical College; 7 to the "Hygeia Therapeutic Medical College;" 9 to the Women's Medical College;[b] 11 to other States and Canada.

A small steamboat plies regularly between Bellevue Hospital (which is situated on the bank of the East River), and Blackwell's Island, for the conveyance of medical staff, sick, &c., &c., to and from the public institutions. The *Island Hospital* was opened for patients in 1860; its predecessor, known as the Penitentiary Hospital, having been burnt down in 1858. It is the largest institution of its kind in the country, occupying a space of 354 by 122 feet. It consists of a centre building, 52 by 90 feet in area, and 60 feet high, and two wings, 50 by 122 feet in area, and 53 feet in height. It contains 1,500 beds, principally occupied by chronic cases. The expenditure in 1862 amounted to £11,920; and the average daily cost of each patient was 14·2 cents. The medical staff is the same as that of Bellevue. For purposes of clinical instruction the two institutions are combined.

The following Table shows the work done in this Hospital during 1863:—

[a] These gentlemen have to pass a difficult professional examination before appointment.

[b] I sought for this institution in a house, in Broadway, having the title over the door; but the birds had flown, and I was unable to discover their new nest.

	White Males	White Females	Black Males	Black Females	Total	Natives	Foreigners
Remained, .	295	458	4	6	763	70	693
Admitted, .	2,679	3,931	24	34	6,668	1,425	5,243
Treated, .	2,974	4,389	28	40	7,431	1,495	5,936
Died, . .	292	346	6	3	647	112	535
Discharged, .	2,463	3,625	15	34	6,137	1,337	4,800
Total, . .	2,755	3,971	21	37	6,784	1,449	5,335
Remaining, .	219	418	7	3	647	46	601

The average number of sick was 619.

The general rate of mortality for the year was 8·71 per cent. The principal causes of death were:—Phthisis, 221; Bright's disease, 43; delirium tremens, 41; typhoid fever, 37; typhus, 29; meningitis, 17; tertiary syphilis, 15.

In the previous year (1862) the total number treated had been 9,407, of whom 643 died; *besides* 998 soldiers, of whom 14 died. The rate of mortality was, therefore, much lower—6·84 per cent.; 35 deaths were due to phthisis (?)[a]; 88 to phthisis pulmonalis; 34 to Bright's disease; 30 to delirium tremens; and 11 to the same complicated with pneumonia; 28 to diarrhea; 13 to old age; 10 to meningitis; 10 to scorbutus; 9 to dysentery; 9 to typhoid; 7 to typhus.

The *New York City Lunatic Asylum* is also situated on Blackwell's Island, and receives gratuitously the insane poor of the city. It is under the supervision of the same Commissioners as the last two hospitals, and was opened in 1839, when the patients were transferred to it from Bellevue. A small charge has lately been imposed upon those who are able to pay. The number of these was

[a] *Vide* note [a], p. 313.

increased since the previous year, and they belong to a better class. The total expenditure of the asylum was 78,687 dollars, exceeding that of the previous year by more than 1,600. From this is to be deducted the receipts from pay patients, amounting to 2,490 dollars. The expense of each patient per week in 1862 was 1 dollar 55 cents; in 1863, 1 dollar 92 cents.

	White Males	White Females	Black Males	Black Females	Total
Remained, .	274	484	8	3	769
Admitted, .	123	215	0	4	342
Treated, . .	397	699	8	7	1,111
Discharged, .	75	145	0	3	223
Died, . .	68	49	0	0	117
Total, . .	143	194	0	3	340
Remaining, .	254	505	8	4	771

Of the 342 admitted 93 were natives (66 of New York, and 27 of other States), and 249 foreigners, whose nationality was—Irish, 144; Germans, 63; English, 14; French, 8; Scotch, 6: 64 males and 75 females were single; 51 males and 117 females married; 27 were widows, and 8 widowers.

The religion of 190 was Roman Catholic; of 138, Protestant; and 14 were Jews. The ages of patients were as follows:—

Ages.	Males.	Females.
Under 20, . .	4	14
Between 20 and 30,	36	79
„ 30 „ 40,	33	67
„ 40 „ 50,	31	29
„ 50 „ 60,	12	21
„ 60 „ 70,	6	3
„ 70 „ 80,	1	6
Total, . .	123	219

Of the discharged, 163 were recovered, 38 improved, and 22 unimproved. Recoveries were 47 per cent. of admissions; and nearly one-half took place within 3 months of their reception into the asylum.

The mortality was 10·5 per cent., having been only 8 per cent. in 1862. Many patients were sent in to die in the asylums, hopelessly affected with chronic disease. Of the 117 deaths, 43 were due to phthisis; 24 to general paralysis or ramollissement (which existed before admission); 6 to epilepsy; 6 to old age; 4 to apoplexy; 1 to suicide; and 1 to accidental drowning.

The Report states that, "unquestionably" the hair of the insane becomes white at an earlier age than that of the sane. It also gives the following curious Table, showing the colour of hair and eyes of patients admitted between 1848 and 1863:—

Hair.		Eyes.	
Brown or chestnut,	3,866	Brown,	1,240
Black,	1,272	Black,	619
Gray or white,	504	Gray,	1,085
Auburn,	105	Blue,	3,142
Red,	98	Hazel,	340
Flaxen,	581	Pink,[a]	1
No hair,	1	Not noted,	103
Not noted,	103		

The war excitement has not increased the number of insane. It would seem rather to have diminished it, or at least to have diminished the number of admissions into the asylums. In 1863 only three soldiers were admitted. Many lunatics who are only partially insane, but can find no employment in the city in peaceful times, can readily obtain admission into the army now. Nor has the war as yet affected the character of delusion, though no doubt hereafter the number of "generals," "governors," and "presidents," within the asylum walls, will be increased.

The system of treatment has, of course, been greatly improved in America as in Europe. In this asylum, 17 years ago, of 383 inmates at least 30 were kept under physical restraint, and 40 more confined constantly to their rooms. At the present day out of 800 patients, not 2, on an average, are confined to their rooms. The restraining strap is used only at long intervals, and then only for

[a] This was an Irish Albino.

the purpose of counteracting suicidal tendencies. Iron wristlets or leg-locks have not been employed since 1848.

The Report for 1862 remarks that very few of the insane patients die of acute disease; most sink under chronic affections of the lungs or bowels, "although in all cases of insanity there must be some changes in the brain. In many instances these changes do not seem to be the immediate cause of death; but there is an indirect action, or cutting-off of the supply of nervous force from the other vital organs, which lessen [*sic*] their capability of resisting disease, and diminishing their recuperative powers." (!)

The same Report gives a table showing the time passed in the asylum by the "discharged cured":—

Under 3 months,	84
Between 3 and 6 months,	28
„ 6 „ 12 „	25
„ 1 „ 3 years,	23
„ 3 „ 6 „	3
„ 6 „ 12 „	2
„ 12 „ 18 „	0

The admission of criminal lunatics, real or alleged, is an evil which will shortly be removed by the completion of the State Asylum at Auburn, for this class of insane patients. "A certain portion" of them never exhibit any signs of insanity. In 1851 a criminal was acquitted on the ground of insanity; six physicians examined and pronounced him sane, and he was discharged from custody.

Before leaving the island I shall notice the *Small-pox Hospital*, which is a department of the great hospital, and was opened in January, 1857. The expenditure in 1862 amounted to 3,689 dollars, the average daily cost of each patient being 35·07 cents.; 15·7 per cent. of treated (357) died.

The return for 1863 is as follows:—

	White Males	White Females	Black Males	Black Females	Total	Natives	Foreign
Remained, . .	11	11	0	0	22	3	19
Admitted, . .	135	110	4	3	352	51	201
Treated, . .	146	121	4	3	274	54	220
Died, . . .	8	9	1	1	19	3	16
Discharged, .	125	109	0	2	236	41	195
Total, . . .	133	118	1	3	255	44	211
Remaining, .	13	3	3	0	19	10	9

The mortality was only 6·93 per cent.

Before returning to the city proper I made a visit to two other islands in the East River, devoted to public charitable purposes. Randall's Island was bought by the Corporation, in 1835, for £10,000. On it stands the *Nursery Hospital*, which is also under the control of the Commissioners of Public Charities and Correction. It was opened in 1851, and has received since then an average of 1,770 children annually. The expenditure in 1862 amounted to 56,328 dollars. The following are the returns of two years:—

Year	Remained	Admitted	Total	Discharged	Died	Remaining	Deaths to Treated per cent	Average Sick
1862	275	898	1,173	897	50	226	—	—
1863	226	1,362	1,588	1,293	105	190	6·61	202

Of the 50 deaths of the former year 7 took place in a subordinate asylum for idiots. Deducting these the mortality would be 3·66 per cent.

On Ward's Island stands the *Emigrant Hospital*, which is under the control of the Commissioners of Emigration, and is capable of accommodating about 1,500 patients. Nearly 6,000 annually receive medical treatment in this establishment.

Of the four principal hospitals of the city itself, two of which have already been noticed, *St. Vincent's* is third in order of time. It was opened in 1849. It is under the charge of the Sisters of Charity of St. Vincent de Paul, and supported by voluntary contributions and the weekly payments of patients—receiving no assistance from city or State. It contains 100 beds, many of the occupants of which are unable to pay the usual charge—four dollars a week for males and three for females, paid four weeks in advance. There are private rooms for clergymen or others, well furnished and comfortable, at higher rates. A spacious garden adds considerably to the advantages of this hospital. The ordinary wards are large (about 40 feet by 15), clean, and well ventilated, being perfectly free from unpleasant odour. They are heated by steam, in a peculiar and effective manner. Cases of sheet-iron, about 7 feet by 4 in length and breadth, and 4 inches deep, are fixed upright in the wards, close to the wall, and filled with steam, the supply of which is regulated by stop-cocks. This plan not only heats the wards equably and well, but affords to convalescents the comfort of a warm surface at which to sit.

Of the revenue in 1862, 469 dollars were donations, 2,094 receipts from private rooms, and 9,806 from the general wards. 629 patients were treated in 1862, of whom 530 paid in full for their board, 45 paid a weekly average of one dollar, eighty-three and one-fifth cents, and 54 were free.

The working medical staff consists of three visiting physicians, three visiting surgeons, and a resident.[a]

In 1862, 629 were treated, of whom 103 died, on 16·38 per cent. Of these deaths 54 were due to phthisis (out of 143 cases), 3 to typhus (9), 2 to typhoid (18), and 4 to old age. The greatest number of patients was treated in 1852, 899, with 114 deaths, or 12·68 per cent. The average number during 12 years (1851–1862), was 594, the average deaths 95, or 15·91 per cent.

The high rate of mortality is explained partly by the large number of phthisical cases admitted, to whom this hospital is more

[a] None of the visiting staff of this, or any other hospital in New York, receive any remuneration for their services.

freely open than others, partly to the admission of moribund patients for religious reasons.

There is no clinique.

St. Luke's Hospital was founded in 1846, and incorporated in 1850, but did not receive patients until 1858. It bears the same relation to the Protestant Episcopal church as St. Vincent's to the Church of Rome. "Corpus sanare animam salvare" is its motto, and it is less an hospital containing a chapel than a church with an hospital attached. The director is a resident clergyman, the nurses and managers a Protestant sisterhood (one of whom compounds, as does also one of the sisters in St. Vincent's). St. Luke's Church forms the centre of the building, and the four principal wards open into it at right angles, two into the nave, and two into the galleries. By this means the sick who are unable to be present at the regular services in church, can hear them in their beds. Evening prayer is said daily at a fixed hour, and the director devotes the mornings to spiritual exercises at the bedside.

The regular charge for board is four dollars per week for adults, and three for children, of whom we saw a large number in the hospital. The parish churches and benevolent individuals maintain a certain number of free beds for persons recommended by them, or for casual cases of sudden injury, &c.

There are four attending physicians, and as many surgeons, besides a resident physician, who receives a higher salary than is allotted to the same official in other hospitals, it being judged advisable to retain a resident for several years, rather than to appoint a new one every six or twelve months.

The wards are beautifully neat and clean, as, indeed, the wards of New York hospitals, with very few exceptions, always are. In this establishment three peculiarities of its construction specially ensure a free supply of pure air to the wards. Firstly, the wards communicate by curtained doorways with the spacious and empty church; secondly, a wide corridor at the north side runs along the whole length of the building between the wards, which open freely into it, and the external wall; thirdly, each ward has a dining-room attached to it for the use of convalescents, an arrangement well worthy of imitation. These advantages more than counterbalance the ill effects of drawers and clothes presses, which form an objectionable feature of the wards.

There is no clinique.

I am not in possession of any late information upon the results

of treatment in this hospital. In 1860 the proportion of deaths to treated was 12·61 per cent., and 14·65 in 1861.

The Jews' Hospital, *The Coloured Home* (the Home not being coloured, but its inmates), and the *Coloured Orphan Asylum* (which was sacked in the riots of July, 1863), complete the list of New York general hospitals, but do not require further notice.

Of special institutions the most interesting and important is the *Woman's Hospital*, which has been working noiselessly, but most efficiently, for nine years. To this hospital hundreds of women owe the alleviation or cure of one of the most distressing ailments peculiar to their sex; while the profession, I trust, will some day share the immense experience in vesico-vaginal and recto-vaginal fistulæ, and their treatment, acquired here by Dr. Marion Sims and his most able and skilful successor, Dr. Thomas Addis Emmett.[a]

This hospital was opened in 1855; it contains about 30 beds, and is supported partly by a small State grant (in return for which each county has one free bed), partly by subscriptions and donations, and partly by the payments of patients, who are charged from four to ten dollars a-week, according to the ward. In 1862 the state contributed 628 dollars, subscribers 433, donors 2,292; and 2,772 were derived from patients. However, for four months of the Summer and Autumn the wards were closed for want of funds, and only re-opened by means of a loan of 1,000 dollars from the Governors of the New York State Woman's Hospital (of which more hereafter). In 1863 the revenue amounted to £1,500.

The board of management consists of thirty-five ladies, including officers.[b] The medical staff comprises three consulting physicians, three or four consulting surgeons, with an attending physician, who sees out-patients twice weekly, and an attending surgeon,[c] who operates twice a-week, besides a resident physician who has charge of the in-patients.

The work done in 1863 was as follows:—610 out-patients were treated—the number having been only 200 in 1861; 110 were treated in the house, of whom 41 were discharged cured, 42 discharged improved—requiring more than one operation, and sent

[a] About 400 successful operations for vesico-vaginal fistulæ have already been performed by Dr. Sims, and more than 140 by Dr. Emmett.

[b] The fifth bye-law illustrates the influence of sex upon committees—"No member shall leave a meeting before its adjournment, nor shall any lady change her seat or hold unnecessary conversation before the board has adjourned."

[c] Dr. T. A. Emmett.

home to recuperate. Two were discharged as incurable. One patient died after the successful removal of a large fibrous uterine tumour, but from causes unconnected with the operation; 85 surgical operations were performed in the hospital during the year.

From this most valuable institution has sprung the *New York State Woman's Hospital*, one pavilion of which is to be erected immediately. The city has given a plot of ground bounded by Fourth and Lexington avenues, and Fortieth and Fiftieth-streets—about 2,500 by 400 feet, free of all debts and incumbrances. More than £10,000 has been raised by donations, entitling the governors to receive from the comptroller of the state £5,000; and it is hoped that these sums will be doubled. This noble hospital, built on the pavilion plan, will accommodate 500 patients, requiring special treatment more, perhaps, than any other class of human sufferers.

Two establishments are devoted to the treatment of diseases of the eye and ear. The *New York Ophthalmic Hospital*, in Fourth-avenue, was opened in 1852, and in ten years from its foundation had treated nearly 10,000 patients. Clinical lectures are delivered here.

The other and older institution, the *New York Eye Infirmary*, was the first of its kind in the United States, having been founded in 1820.[a] It is open to the poor of all parts of the State, receiving grants from both State and city treasuries, and is supported besides by voluntary contributions. It has lately received a bequest of £2,000, and the surgeons are endeavouring to raise £3,000 or £4,000 more, for investment, in order to render the institution independent of precarious assistance, and to enable it to extend the advantages of in-door treatment.

The medical staff consists of 4 surgeons, 2 consulting surgeons, and 2 assistants. The work done in 1862 was as follows:—4,842 cases of eye and 521 of ear disease were treated, making a total of 5,363; of whom 2,775 were natives and 2,588 foreigners. In the house 108 males and 51 females were received; total, 159.

From the foundation of the infirmary to January 1, 1862, 77,519 patients had been treated, making a total of 82,882 to the end of that year.

Clinical instruction, and courses of lectures of the most valuable kind, are given in this institution, which also contributes largely to the advancement of ophthalmic and aural surgery through the medical journals.

[a] The Massachusetts Charitable Eye and Ear Infirmary was founded in 1824.

It only remains to enumerate the remaining special hospitals of New York. *The New York Asylum for Lying-in Women* was founded in 1823. It is under the management of a board of twenty-one ladies, and is supported entirely by voluntary contributions. The rule excluding all but married women is stringently enforced. *The Institution for the Deaf and Dumb*, for many years identified with the well-known name of Dr. Harvey P. Peet, was incorporated in 1817. Finally, *The Institution for the Blind* dates from 1831.

From the hospitals we come to the *Dispensaries* of New York, which are now seven in number, supported chiefly by voluntary contributions, but assisted by annual appropriations from the Common Council,[a] and occasional small grants from the State. The City Inspector, in his Report for 1861, pronounces their "organization and internal police" to be "faultless." The oldest is the "New York Dispensary," founded in 1791—second in the United States, the Philadelphia Dispensary having been organized in 1786, and the Boston in 1801. The youngest is the "Manhattan," founded in 1862. Their operations extend over the space included between Sixtieth-street (five miles from the Battery) and the two rivers.

The expense of these institutions in 1862, excluding repairs and management, or permanent improvements, amounted to £4,240; the average cost of medical, surgical, and vaccine service to each patient being 14½ cents (7¼d.). The Reports estimate the pecuniary value of the dispensary system to the public, for the same year, at more than £63,500.

In 1861 the dispensaries treated 135,235 persons—16·60 per cent. of the entire population, and one-half of the city's "annual illness." The average attendance at each dispensary in that year was 90 daily. The proportion of foreign to native applicants for advice has been as high as 3 to 1; but during the three years, 1859–1861, it was only 57 to 54. The proportion of deaths to treated was, in 1861, 0·77 per cent.

In 1862 the number of persons who received advice, &c., from the dispensaries was 145,598; 274,648 prescriptions were dispensed, and 18,408 persons vaccinated. Since 1804, when vaccination began to be practised, 275,844 were operated upon in the dispensaries of New York.

The staff of each consists of two or more visiting physicians, who

[a] The donations by the city in 1862 amounted to 6,750 dollars.

attend at the dispensary at least twice a day, examine the register of names and addresses of applicants which is kept there, and visit accordingly; a house physician, whose duty it is to be present from 9, a.m., till 4, p.m., to classify the patients attending for advice, and to prescribe for emergent cases. These officers receive remuneration for their services. At the Demilt Dispensary (founded 1851), with which we are best acquainted, patients attending at the institution are divided into *Seven* classes, to each of which two medical officers are attached, who do duty upon alternate days. This labour is altogether gratuitous. The classes are—diseases of heart, lung, and throat; of head, abdomen, &c.; of eye and ear; of children; of the skin; of women; and surgical cases.

The work of the dispensary in 1862 may be briefly summarized thus:—10,088 males and 14,457 females (total, 24,545) received advice and medicine at the house; 2,323 males and 3,238 females (total, 5,561) were treated at their dwellings—total treated, 30,106; 58,028 prescriptions were dispensed; 3,318 cases were vaccinated (478 more than in the previous year); deaths were 1 in 135. The average cost of each patient for attendance and medicine was 18½ cents (9¼d.)—it was 20 cents during the ten years 1853–1862. The receipts of the year were 5,224 dollars, to meet an expenditure of more than 6,200. The population of the district allocated to this dispensary increased from 31,557 in 1850 to 67,329 in 1855, and 106,489 in 1860.

Medical Societies throw considerable light upon the state of the profession in any country; nor would our paper be complete without some account of those of New York. I hope I shall be pardoned if I digress a little from our proper subject in order to notice two societies which do not belong exclusively to New York City, but to the State and the Union.

The *American Medical Association*, under the title of the "National Medical Convention," was founded in New York in 1846. In the following year its organization was completed, and it adopted its present name. It represents the entire medical profession of the United States. Each medical school, each considerable hospital, and each medical society in the Union sends delegates to the meetings, which like those of the British Association for the Advancement of Science, are held annually in the various large cities of the United States. At these assemblies most valuable papers are read, professional subjects are discussed, and points of

medical ethics are decided authoritatively. In this last particular this association supplies a want which we often feel in these countries. At their first meeting in 1847, a code of medical ethics was adopted setting forth the mutual duties of the profession and the public, as well as of medical men amongst themselves.

The transactions of this society are well known to the profession in Europe. Each member receives a copy, of course; the cost of publishing which, as well as all other expenses of the association, being defrayed by an annual subscription of not more than three dollars. The meeting of the current year took place in New York.

The *New York State Medical Society* was established by an Act of the Legislature passed in 1806, and was organized in 1807. Each county medical society sends as many delegates as the county elects Members of Assembly (the Lower House of the Legislature), and each medical college in the State has one delegate. The Academy of Medicine (of which we shall speak presently), is also represented. Sixteen "permanent members" are elected annually from those whose term as delegates has expired. The society meets annually at Albany—the capital of the State—and a volume of transactions is published every year at the public expense. The papers read at the meetings of the county medical societies, are, if approved of by them, referred to the State Society, which decides upon their fitness for publication in the transactions.

In 1862 this society numbered 272 members, besides those on its honorary list.[a]

The oldest medical association of the city is the *New York County Medical Society*, which was incorporated in 1806. It sends seventeen delegates to the State Society. Its meetings are held monthly, and the papers read are, as we stated above, referred to the former for publication. The annual subscription is one dollar. It is a curious fact that the only name on the honorary list of this society is Hahnemann's! The subject of honorary membership, however, is under consideration.

The *New York Academy of Medicine* was organized in 1817, and incorporated in 1851. It consists of resident, non-resident (100), corresponding, and (50) honorary members. Its professed objects are the cultivation of the science of medicine, the advancement of

[a] Of the four honorary members elected in 1862, one, Dr. Carpenter, is an Englishman; and another is Dr. T. G. Geoghegan of this city.

the character and honour of the profession, the elevation of the standard of medical education, and the promotion of the public health. Meetings are held in one of the rooms of the University buildings twice a month, at which papers are read and special subjects discussed by the leading members of the profession. Two volumes of Transactions, as well as Bulletins, have been published. The annual subscription is five dollars; the number of resident fellows is 250.[a]

An "oration" is delivered annually, in November, by one of the most distinguished members, chosen for the purpose by the Academy. On the last occasion the orator was Professor Draper—a name well known in the world of literature and science.

The *New York Pathological Society* was organized in 1844. It meets twice a month except in August. The yearly subscription is two dollars and a-half.

In two points the system of this Society differs from that of the corresponding institution here. Free discussion upon the preparations presented is allowed, and in this way much valuable information of similar or analogous cases is elicited The minutes of the meetings include these discussions, as well as the remarks made on presenting each specimen; and, being read out in detail by the Secretary, on the next night of meeting, afford members an opportunity of correcting inaccuracies in the report.[b]

Besides these great societies, New York abounds in smaller medical associations, numbering from one to two dozen members, who meet at each other's houses monthly in rotation; and, in some cases at least, terminate the proceedings by a social supper. These meetings tend to maintain a friendly feeling amongst the members of the profession, and are worthy of imitation amongst ourselves.

New York must be the Paradise of charlatans, if we can suppose them admitted to a Paradise of any kind. The daily and weekly newspapers teem with advertisements of quack medicines, warranted to cure every disease of mind and body. The number, and constant insertion of these advertisements—some of them of great length, and

[a] In the list of corresponding fellows in 1862, Ireland is not represented; Scotland appears in the persons of Drs. Bennett and Simpson; England by Mr. Fergusson, Sir Henry Holland, and Dr. Roget; Prince Krom Luang Wangsa Tirat Sanit, of Siam, closes the list.

[b] One instance occurred in which a member was reported as having injected a solution of "*common salt*" into the cavity of the abdomen, after the operation of ovariotomy (which terminated favourably). On hearing the minutes read he was able to restore the original "*chloride of soda.*"

proportionably costly—prove their success for entrapping the unwary and the sanguine. Nor is this the worst evil of these advertisements. The indecency and suggestiveness of some of them are abominable; and, strange as it must appear, I have heard it publicly stated, that the religious journals are the worst offenders in this respect—and that many have felt it impossible to present these papers to the eyes of their families on this account. The enormous profits obtained by these advertisers from the sale of their medicines, their advice, or their assistance, enable them, it is to be supposed, to pay such rates as overcome the scruples of the proprietors of journals of weak circulation. The greatest of New York newspapers in circulation and revenue (though in little else), for whom that poor excuse cannot be pleaded, is positively unfit for the perusal of respectable women, and, it might almost be added, of respectable men either, owing to the obscenity of some of its advertisements.[a]

There is one branch of practice, irregular and criminal, which, there in reason to fear is carried on to a very great extent in New York—not always, I regret to say, by irregular practitioners only. Criminal abortion—judging not only from the advertisements and the police reports, but also from information derived from other sources—is practised with the greatest frequency, and with almost perfect impunity. Not only the young woman, fearing to become an unwedded mother, but the matron otherwise respectable, who dreads the increase of trouble and expense which another child will bring, goes, with scarce a thought of secrecy or guilt, to the druggist for a dose of oil of savin, or to well-known and established practitioners in this particular line, to have their object effected, either by drug or instrument. Nor is this the case only with the "lower," as they are called, or poorer ranks of society. The persons of whom I speak pursue this abominable calling among classes who have not the excuse of poverty, and individuals who cannot plead the dread of shame, in palliation for their desire to destroy their unborn offspring. The moral sense, even in many whom society calls "ladies," does not revolt against the practice of artificial abortion, or miscarriage, as it does amongst ourselves.

We have before us a circular addressed "To Ladies Enceinte," but distributed amongst gentlemen of the mercantile and professional classes. It recommends to ladies, "whose HEALTH will not

[a] I must in fairness say, however, that these are not *all* medical or pseudo-medical.

warrant their incurring risks incident to maternity, or the culmination of which threatens an unpleasant denouement, . . . a new and highly important scientific discovery, recently made by a regularly educated physician and surgeon of extensive experience." This new process averts "impending evil;" if applied before quickening; is safe, infallible, and imitates nature exactly. But the following advertisements, cut at random—the three together—from the "Medical" column of the *New York Herald*, will fully illustrate my remarks. We have in them the thorough quack, the established "Female Physician and Professor of Midwifery," and the debased qualified practitioner—of whom the New York University and the London College of Surgeons have little reason to be proud:—

"ADVICE TO MARRIED OR SINGLE LADIES,

"Who require a safe and certain remedy from whatever cause; can rely upon the celebrated infallible French Female Monthly Pills, price one dollar a box, to restore the monthly sickness in forty-eight hours, if of short standing; but obstinate cases, of long standing, may require No. 2, which are four degrees stronger than No. 1, and can never fail; are safe and healthy. Price five dollars a box. Sold at ——, or sent by mail, with full instructions, by addressing ——. N.B.—Those who prefer a valuable, certain, and safe mode of treatment, without the use of medicine or instruments, can avail themselves of it by one interview, and be attended by one of their own sex."

"ADVICE TO MARRIED LADIES.

"Madame ——, Female Physician and Professor of Midwifery, can be consulted, as usual, at ——. But one interview will be necessary. No charge for advice. Her infallible medicines can also be obtained at ——, or by mail. Price five dollars. N.B.—Ladies who desire board, and the best medical attendance during confinement, can be accommodated. Madame —— deems it her duty to caution ladies against imitators of her advertisements, who not only rob them of their means, but their health."[a]

"NO FEE TILL CURED.

"Dr. C., Member of the New York University (Medical College), and College of Surgeons, London, can be consulted

[a] The readers of Professor Bedford's work on Obstetrics, will remember a curious case in which this lady figures. She has had "difficulties" with the law courts, once at least, with the result of spreading her fame and increasing her practice.

> privately, on certain diseases, at his offices. A practice of thirty-four years (three of which has been in the hospitals of New York and London) enables him to treat with success nervous debility and all kindred affections. Consultation strictly confidential."

Homeopathy is thoroughly organized and thriving mightily in the United States, and especially in New York. In 1861, three hospitals, three colleges, three journals, about thirty societies, and 2,500 practitioners fought disease under the banner of Hahnemann in the United States. In New York, the homeopaths have obtained from the Legislature the power of conferring the degree of M.D.; and the *Fifth Annual Prospectus and Announcement for* 1864–'65 *of the New York Homeopathic Medical College* is before us. From this document we learn that the "institution has steadily increased in strength and is daily winning the respect and confidence of an enlightened public." Its "distinctive teaching is, of course, *similia similibus curantur*," but the student "will be familiarized with the philosophy of the entire history of medical science, with all its teachings and practical lessons as promulgated in our best standard works." The fortunate alumnus of this college thus combines the advantage of a careful medical education, with instruction "in the great principles of that advanced philosophy, which has, within the past few years, so rapidly changed and elevated the character of the medical profession."

The system of education is the same as that of the other medical colleges—the fees almost the same, but "invariably cash." Nothing in the rules seems to require the "preceptor" to be a homeopathic practitioner. Precautions are taken to let an unfortunate candidate for graduation "down easy." If the faculty think that he would be the better of another course of lectures, he may withdraw his thesis "without being considered rejected." And "in unsatisfactory cases, a candidate may avail himself of a second examination before the whole faculty, with their consent;" what under-graduates in our university used to call a "*post mortem* examination."

In the sessions 1863–'64 73 students matriculated; 35 from New York, of whom 12 belonged to the city; 12 from Canada West; 6 from Pennsylvania; 4 from Massachusetts; and 13 from other States; 1 from Germany and 1 from London. At the last Commencement, 26 gentlemen graduated—William Cullen Bryant, editor and poet, presiding as President of the Faculty of the College.

By a special Act the students are admitted to the wards of Bellevue Hospital, and others; and in all other respects this college is legally equal in position to any other in New York. Admission to the county medical societies has been obtained, by legal decision, after resistance. Several homeopathic dispensaries have been established in the city. Several "homeopathic physicians" enjoy most lucrative practices—one of them, indeed, is said, when in full practice, to have derived a larger income from his profession than *any* other practitioner in the city.[a] So that, on the whole, New York must be the place to which good disciples of Hahnemann hope to go when they die.

From the flourishing condition of homeopathy it might be inferred that a larger proportion of regular physicians would be found willing te meet these "irregulars" in consultation in New York than in our large cities. And such is, we believe, the fact. For example, a Woman's Hospital, on a large scale, on Hahnemannic principles, is in contemplation; and the printed circulars announce that Dr. Carnochan (whom we have mentioned before) has accepted the position of Consulting Surgeon to the projected institution. In other respects, also, we have seen reason to believe the standard of professional etiquette is somewhat lower in New York than at this side of the Atlantic; or, to state it more accurately, the proportion of the members of the profession whose notions of etiquette and medical ethics are low, is somewhat greater there than here. As an illustration we may mention a question which we knew to be referred to the State Medical Society for determination, viz.:—Whether the general and established prohibition of advertising by medical men was intended to apply to advertisements in *professional* journals? There could be no uncertainty on the point in these countries.

I shall conclude my account of the state of our profession in New York with one remark. There is little exclusive specialism. I have heard a professor of surgery casually alluding in his lectures to an ordinary obstetric case, in which he had recently been engaged. The leading surgeons, *i.e.*, those whose experience and practice are principally surgical, do not hesitate to prescribe for purely medical cases. A few could be named, eminent members of the profession, who *do* restrict themselves to special branches of practice,

[a] The gentleman alluded to (Dr. R.) has been very successful in his treatment; and is said to be the *purest* homeopathist in the city. It is remarkable, however, that he takes no part in medical education; and, we believe, does not meet his Hahnemannic brethren in consultation.

and with advantage both to their art and to the public. But these are, as yet, exceptional. I believe that the spread of "specialism," if not carried to excess, in a large city like New York would be beneficial.

I have left myself little room to describe the nature and operations of the *Sanitary Commission*. I must content myself with a few brief notes on this subject.

The Sanitary Commission was created by the Government of the United States in June, 1861. It meets at Washington quarterly; holding special sessions whenever necessary. In the intervals its affairs are administered by a General Secretary and a Standing Committe of five, meeting daily in New York. The chief object contemplated by the Commission at its first institution was the sanitary inspection of camps, ports, and hospitals. It was inevitable that when an immense army like that of the United States, in 1862 and the following years, was rapidly—almost suddenly—developed from a nucleolus of 12,000 men, a large proportion of the medical staff would enter upon military duties in utter and excusable ignorance of military hygiene. To obviate the evils of this state of things was the primary object of the Commission. But they have not confined themselves to this task. Their agents, paid and trained, accompany the corps and divisions of the army, supplying food, medicines, medical aid, and medical comforts in cases where Government stores are deficient, or the number of surgeons insufficient. All this work, it must be remembered, has been done with the sanction and approval of Government, and in concert with the military medical officers. In every trouble incident to the soldier's life he has found the Sanitary Commissions' agents his friends and advisers; but aid and advice have been bestowed in such a way as to increase rather than diminish his dependence on, and respect for, his military superior. Space will not permit me to dwell more in detail upon the incalculable benefits which this agency has been the means of securing to the national army. I must refer the reader to the publications of the Commission for full information upon this point, and for a series of papers of the greatest possible value to sanitary science and military hygiene.

The Sanitary Commission is and has been altogether dependent for its funds upon voluntary contributions. It has received aid from Government, as it has from railway and other transit companies, in the shape of occasional transport for its stores by land and water; but no public money. It has been kept well supplied with

funds by patriotic Americans in all parts of the world. The treasurer received in cash, between June, 1861, and the 7th December, 1863, 919,581 dollars, of which more than half came from California—unable, from its position, to take a more active part in the struggle.

It only remains to quote from the paper before me (No. 69), a passage showing the results of the combined efforts of the medical staff and the Commission:—

"It is from the nature of the case impossible accurately to estimate how many men have been saved from death or disease, and how much efficiency has been economised for the country by this preventive service; for though the results of the treatment of disease can be more or less accurately recorded, the result of measures for its prevention cannot be stated with any kind of certainty. The only attainable data on the per centage of disease among men to whom such preventive measures have been applied, and among those to whom they have not. Though inferences from a comparison of the two are not absolutely to be relied on (because we can never be quite sure that the conditions of any two cases have been precisely the same), a comparison of the mortality rates of our army with those of the British armies in the Crimea and during the Peninsular war will, nevertheless, throw some light on the question.

"The average annual loss of the whole British army during the Peninsular war was 165 men out of every thousand. Of these 113 died by disease or accident.

"From 1803 to 1812 the average annual death-rate of the whole British army 'abroad' was 80 per 1,000—71 by disease and accident, and 9 by wounds in action.

"In July, August, and September, 1854, the British army in the Crimea lost at the rate of 293 men out of every thousand per annum; 96 per cent. of this loss was from disease. During the next three months, October, November, and December, 1854, their loss was at the annual rate of 511 out of every thousand, seven-eighths of which loss was by disease. In January, 1855, it was *at the rate of* 1,174 *per* 1,000 *per annum*; 97 per cent. of this loss being due to disease. During the first three months of that year it was at the annual rate of 912 per 1,000; and 98 per cent. of the loss was due to disease.

"Up to May 18, 1862, our armies had lost at the rate of 53 per 1,000 per annum, and only 44 per cent. of that loss was by disease and accident.

"In estimating the value of these figures it must be remembered that the conditions under which our soldiers serve have been generally unfavourable. Their fields of operation includes large districts, quite as

insalubrious as any part of Spain, Portugal, or the Crimea. There has at all times (and especially during the first year of the war) been among them a large proportion of half-disciplined recruits, and of inexperienced officers, while the soldiers of Great Britain, in the Peninsula and the Crimea, were regulars under high discipline, and commanded by professional officers. The commissariat and the medical department of the British army, were parts of a system long established and matured. In May, 1862, ours were newly organized (for the purposes of this war), and not yet in perfect working order. The Peninsular and Crimean armies had, therefore, material advantages over our own. Yet we have lost far fewer men by disease. Even on Morriss Island, and in the pestilential swamps of the Lower Mississippi, our loss by disease has been smaller than that of any army about which we have authentic information. For this great fact—equivalent to the addition of hundreds of millions to our national resources—the nation can never be sufficiently thankful. No human agency could have insured it. Though the average intelligence and culture of our common soldiers are beyond those of any army ever yet put into the field, and though the medical staff and the sanitary commission have worked diligently in their respective spheres, a blessing so great, exceptional, and unhoped for, can be attributed to none but the Highest cause."[a]

Art. XV.—*Granular Swelling, or Benign Fungus of the Testicle in Infants.* By Christopher Fleming, M.D., M.R.I.A.; Surgeon, Richmond Hospital; Visiting Surgeon, Dr. Steevens' Hospital; Lecturer on Clinical Surgery; Member of the Court of Examiners, R.C.S., Ireland; Member of the Surgical Society of Paris, &c., &c.

An infant, aged fourteen days, was brought to hospital with acute inflammation of the left testicle. No cause could be assigned for the attack. The health of the child, for its age, appeared to be perfect, and there was no trace of eruption or other disease of any kind. The mother was healthy, and had other children who were healthy, and, from her statement, it would appear that the attack in the child had commenced, some days previous to her application, with

[a] "The last Report of the Secretary of War, as just published in the daily papers, states the number of patients in General Hospital, June 30, 1863, as 9·1 per cent., and in Field Hospital, 4·4 per cent., of the whole national forces; and that of this aggregate of 13·5 per cent. 11 were cases of sickness, and 2·5 of wounds, or other casualties."

fulness and tenderness of the scrotum, and that those symptoms gradually advanced until they reached their present state. Now, the distinctive characters of "acute orchitis" on the left side existed in their most intense form. The scrotum, especially, was very much inflamed, and prominent in front of the testicle, which, with the epididymis, was so much enlarged as to equal the size of a large hen egg, and the chord was painful on pressure and much thickened. In the progress of the case there was considerable urinary irritation, at one time amounting to retention of urine, which required the introduction of a catheter. Treatment was adopted suited to the age of the child, but the mother could not remain in hospital. She attended from day to day for dispensary advice. Her poverty and condition, however, did not enable her to carry fully out the directions given her, when, at the end of a week, a slough presented itself on the thinnest and most prominent portion of the swelling of of the scrotum. This slough was, in a short time, detached, when a granular growth protruded through the opening, increased to about the size of a large nut, and ultimately assumed all the characters of the ordinary "granular swelling of the testicle." This disappeared under treatment, and, when the child was last brought to hospital, the scrotum, the testicle, and the chord were gradually assuming their normal characters, and the ulcerated surface was contracting and cicatrizing. (A drawing of the appearances in the earlier and in the granular stage of this case has been taken by Mr. Connolly, and is now in the museum of the hospital.)

Diseases of the testicle, of the spermatic chord, and of the scrotum, are by no means of rare occurrence in the infant and child. Numerous instances pass under my observation. Limiting my present remarks, however, to the subject of "orchitis" at those periods of life, I would say, that seldom or ever a month passes over without my witnessing one or more of such class of case in its acute or chronic form, and involving one or both testicles. The above case is deserving of record, as well on account of the early age of the child, as of the rapid progress, and peculiar termination of the case itself. In child or in adult "acute orchitis" seldom terminates in even a disposition to "granular swelling"—it is rather the exception than the rule that suppuration takes place, and when so, the reparative processes are too quickly accomplished to admit of that morbid growth.

In the majority of instances of "chronic orchitis" an induration of the body of the testicle, and of the epididymis, as in the adult,

continues for a variable time, and gradually subsides under treatment—in others, again, this hardness is accompanied with effusion into the cavity of the tunica vaginalis, just as in the adult, constituting what has been termed hydrosarcocele, which also disappears under treatment—whilst, in a third class of cases, suppuration will equally supervene, will pass through stages familiar to all practical surgeons, but will not end in the "granular swelling of the testicle," unless from great local neglect. Indeed, when we bear in mind the anatomical character of the disease, it is quite intelligible that much care is requisite in their local management. All undue pressure should be avoided, especially in their inflammatory stages, and thus the integrity of the delicate structure of the scrotum on the one hand, and that of the investments of the testicle on the other, will be protected, Destruction of a greater or less portion of the scrotum must otherwise ensue in the first instance, whilst in the second a fungus, merely *superficial*, may be converted into that *deep* form, in which the proper tissue of an important organ is necessarily involved.

Mr. Curling, in his admirable work on Diseases of the Testicle, alluding to this subject in connexion with that of "chronic orchitis," has been kind enough to insert some remarks of mine respecting the "granular swelling of the testicle in the infant and the child," a case of which he had not witnessed until shown to him by me on the occasion of one of his visits to Ireland. I beg to refer to those remarks, as well for the history of the symptoms detailed in the cases given, as for the treatment to be adopted, and will merely add that I am inclined to the opinion that those passing seizures of "orchitis," especially in its acute form, which occur in the infant and child, and which are accompanied with urinary irritation, may be connected with more or less of derangement in the condition of the urine.

Minute particles of "red sand," or at that age, more properly speaking, of "whitish sand," or small calculous concretions passing along the ureter or the urethra, would account, not alone for the affection of the testicle, but for the abdominal griping pain, the nausea, and the vomiting so constantly attendant on these attacks, and this the more probably as morbid conditions of the urine, where uric acid is in excess, are by no means an unfrequent occurrence in child-life.

Art. XVI.—*A Case of Ileus accompanied by Fecal Vomiting Successfully Treated by Galvanism directly applied to the Mucous Surface of the Intestine.* By J. M. Finny, L.R.C.S.I., M.B. Univ. Dub.

Robert Fox, labourer, was admitted, from Howth, into the medical wards of the Meath Hospital on 29th of June, 1864, under the care of Dr. Stokes.

The patient, who is a strong well-built man, about fifty years of age, states that he is of temperate habits, and that previous to his present attack of illness he had always enjoyed very good health, though he occasionally, of late, suffered from headache, of which, however, a dose of purgative medicine generally succeeded in freeing him; that on Saturday, June 25th, as he was suffering from headache, he took a dose of his accustomed medicine, namely, Epsom salts. This acted on his bowels once the following morning, but not to as full a degree as usual. In about half an hour after he experienced pain in the left side of his belly. Thinking it would soon leave him he did not mind it; it, however, rapidly became so severe as to compel him to send for medical aid. His attendant applied turpentine stupes to the abdomen, and gave him a draught consisting of turpentine and castor oil. As this failed to have any effect on his bowels, two turpentine injections were administered, to be followed, however, by the same want of success, as they were not even returned. The patient passed a sleepless and wretched night.

27th.—He vomited a large quantity of greenish-coloured fluid in the morning. The pain in the abdomen still continued, though a little less severe than on the day preceding. As his bowels were still unmoved the turpentine injections were repeated, and altogether, between the day and night, five enemas, consisting each of more than a pint of fluid, were thrown up the rectum. They also failed to produce any effect, not having been returned, nor having even given rise to a desire to go to stool.

28th.—After a miserable night hiccup set in, followed by frequent vomiting of the contents of the stomach; this continued throughout the day, with short intervals of repose. The pain, which before was in the left side, now changed its position, and was referred to the right side of the umbilicus; it became intensely acute, and was aggravated by the least exertion or pressure made on the abdomen.

He also experienced some difficulty and scalding in making water, which was of a dark colour, and emitted a strong odour. Five leeches were applied to the most painful part of the abdomen, which gave considerable relief; there was, however, no motion from the bowels. Failing to obtain any sleep during the night, and finding no alleviation of his serious symptoms, he was brought to hospital the following morning, June 29th.

As the patient had, during the last three days, obtained little, if any, sleep, and had been suffering severe pain, along with deranged gastric functions, as nothing remained on his stomach, it was no wonder that he presented the following symptoms on admission:— Face greatly flushed; eyes bright and sunken; expression extremely anxious; tongue coated and foul; extremities cold; pulse 86, very small; incessant and painful hiccup, which has lasted since early in the morning. The patient is in great pain, which he refers to the right side of the abdomen, midway between the umbilicus and short ribs. The belly is greatly swollen, hard, and tense, and immediately above the umbilicus it presents a deep sulcus, as if it were constricted by a tight band. To the left of the rectus abdominis muscle are two or three elevations, which have the appearance and feel of coils of intestines. They are partially dull on percussion and do not disappear on pressure. No gurgling can be felt in any part of the abdomen, and on applying the stethoscope nothing can be heard; all is silent and still. A careful examination for external strangulation was made by Mr. Collis, but nothing abnormal was discovered As the patient had not made water for several hours, about a pint of high-coloured urine was drawn off by the catheter.

As four days had now elapsed since the commencement of this attack, and the patient's bowels had refused to act even to the smallest degree, notwithstanding the administration of seven enemas, besides purgative medicine by the mouth, it became a matter of difficulty to decide upon the best method of attaining the desired result—namely, the evacuation of the patient's bowels, and the relief of the abdominal distress and pain. Considering it possible either that the injections, thrown up the rectum before admission, had been inefficiently administered, or that there might be some impaction of feces, or other obstruction in the rectum, or lower portion of the colon, the long tube was directed to be passed, and a large terebinthinate enema to be injected. The tube was readily passed up the intestine to its full length, without, however, meeting any obstacle. After the administration of this enema, the patient

was placed in a warm hip bath, and while in it his belly was rubbed and kneaded. This proceeding was followed by some relief from pain, and by a cessation of the hiccup.

Ordered.—A grain of opium, in a pill, every third hour, and to have twelve ounces of wine and a pint of chicken broth, and the patient's belly to be frequently rubbed with warm oil throughout the day.

June 30th.—The patient slept a little during the night, and is somewhat easier this morning. The pain, which he describes to be of a gnawing character, with occasional sharp stings, is not so severe; the belly is still hard and tense, but is not so painful on pressure. During the night the patient vomited about two pints of dark fluid, devoid, however, of any offensive odour; his bowels have not been moved, and he has had no desire to go to stool; the hiccup, which yesterday was so distressing, is considerably abated, as it comes on now only after some exertion, such as change of posture.

Ordered.—A pill of calomel and opium every third hour; warm poultices to the abdomen, with an excess of oil; wine, ten ounces; chicken broth, a pint.

July 1st.—Had a very bad night; did not sleep, as the hiccup had again become very troublesome, and vomiting had set in, so that nothing stays on his stomach; he threw up during the night a large quantity of fluid, part of which, he says, was "stinking stuff" (by some mistake it was not kept for our inspection); he complains of great thirst; his tongue is dry and red; his lips parched; pulse regular, but weak—eighty; his bowels are still unmoved.

This being the sixth day since there was any motion from them; his belly seems more swollen; the pain he still refers to the same place; the markings or elevations observed on the day of his admission have disappeared; no localized hardness or fulness can be felt anywhere.

Ordered.—Pills of 30th to be discontinued, and to have a pill of extract belladonna every third hour; to continue poultices, wine, and chicken broth, and to have ice to allay the hiccup.

5 o'clock, P.M.—As there is no improvement, the bowels not having acted, he was ordered pills containing croton oil, strychnia, and extract of colocynth; one to be taken every second hour.

July 2nd.—The patient is somewhat easier, as he slept a little; his bowels were moved once last night after taking four of the croton oil pills; the stool is very scanty, not exceeding a pint, of a

black tawny colour; the abdomen is less swelled, and the constricted appearance presented on the day of his admission less marked.

Ordered to omit the pills containing croton oil, and to take those of extract of belladonna; a warm hip-bath at night, and two grains of powdered opium to be taken at bed-time, if necessary.

July 3rd.—Patient suffered a great deal yesterday from pain, which became towards evening greatly aggravated; he slept, however, after the opium, and does not complain so much this morning; the hiccup, which had left since the night before last, has again returned, and causes the patient great distress, which is only relieved by vomiting; the matters ejected are evidently fecal in character; there has been no motion from the bowels.

Galvanism was now applied to the external surface of the abdomen by placing the sponges attached to the poles of the electro-galvanic battery on either side of the belly; by fixing one sponge over the sigmoid flexure of the colon, and by moving the other in the course of the large intestine, the whole abdominal muscles were thrown into a good deal of spasm. The operation, which was attended by considerable suffering, lasted about seven minutes. It seemed, however, to fail in exciting any action of the intestines, as after its application the stethoscope could discover no internal motions or sounds. Nor has the patient the least desire to go to stool.

Ordered a grain of opium, in pill, three times a day; to omit extract of belladonna; and in the evening to have an enema of ordinary house medicine administered by means of the long tube.

July 4th.—The injection was followed by two fluid feculant stools; they are, however, scanty in quantity, and do not at all correspond, even to the amount of injected matters. The patient felt great relief afterwards. He is much more composed and cheerful this morning, and complains of but very slight pain. The belly is somewhat softer and flatter, and the constricted appearance seen above the umbilicus has quite gone. He has had no return of vomiting since his bowels were moved, and is very sanguine of a speedy recovery.

Ordered.—To repeat the opium pill; to have eight ounces of wine and chicken broth.

July 5th.—In the afternoon yesterday the patient became much worse, as the abdominal pain increased, and hiccup returned; and during the night a large quantity of fecal matters was ejected by the mouth. He is very low and desponding to-day, and refuses to take his stimulants; his pulse is weaker and more compressible than

yesterday; tongue and mouth dry; nothing remains on his stomach for any length of time; his bowels have not been moved since the night of the 3rd.

Ordered to repeat the pills of croton oil. Ordered, July 1st, brandy, four ounces; wine, six ounces; chicken broth.

July 6th.—Bowels have not been relieved by the pills. The patient spent a very miserable night, as copious fecal vomiting has continued, preceded by painful hiccup.

The patient is very restless, throwing his arms about, and frequently changing his position. He is covered by a clammy sweat; his face is drawn, and expressive of great anxiety; eyes sunken and heavy.

As all the treatment hitherto adopted has entirely failed in producing any decided and beneficial effect in evacuating the intestines, and as fecal matters have been ejected by the mouth almost continuously for more than three days, ever since the night of 2nd, with the intermission of about fifteen hours on the 4th; it is evident in such a case that unless some more speedy and efficacious treatment be employed, the patient cannot be expected to exist much longer.

Under these most serious circumstances the application of the galvanic stimulus to the mucous surface of the intestine, was proposed by Dr. Stokes as a *dernier ressort.* The manner in which it was applied is as follows:—

The patient was directed to place himself on his hands and knees, and while in this position, with his buttocks well raised and his head low, I passed up the long tube with the intention of administering a large enema of ordinary house medicine, previous to the application of the galvanism. The tube passed up readily as far as seven or eight inches, when it met some obstacle to its progress. On its withdrawal some feculent matter was observed at its end. It was again re-introduced, and by steady pressure and frequent injections, it slowly passed through some solid obstacle without at all conveying the idea of elasticity. Once through, it was readily passed up the intestine to its full length, and the remainder of the injection was thrown up. On removal of the syringe there was no escape of flatus or return of the injection. The exhausting syringe was now applied to the external extremity of the tube, but failed in causing any flow through it. Without withdrawing the tube the patient was placed on his side, and one sponge, connected with the negative pole of the electro-galvanic battery, being applied to the margin of the anus, the other sponge, in connexion with the

positive pole, was applied in a rapid manner over the whole external surface of the abdominal walls. After a few such applications there was a gush of fluid matter through the tube, which was then withdrawn, and the sponge which had hitherto been applied to the verge of the anus, was, along with portion of the metallic handle to which it was attached, passed up the rectum two or three inches, while the same proceeding as before was renewed with the other sponge. Each sudden application threw the whole abdominal muscles into the greatest spasm, and was immediately succeeded by a gush of fluid feces. Three large basinfuls were thus got rid of. The operation which had lasted about ten minutes, and which was attended with the most intense agony, so much so that the patient writhed under it to a painful degree, was now suspended, as great prostration of strength had ensued, the patient's pulse becoming almost imperceptible. He soon, however, rallied on the administration of brandy, and expressed himself greatly relieved. He then fell into a quiet sleep. In the afternoon he had two fluid stools, and eight more during the night entirely devoid of pain. No hard lumps were noticed to have been passed at any of these stools.

July 7th.—The patient is greatly improved in appearance; he has had an easy and painless night's rest, and feels very much better; he has had no return of the hiccup or vomiting, and complains of no pain in the abdomen even when pressed upon; his appetite has already improved, and he wishes for a chicken for dinner.

July 9th.—Since the 7th he has rapidly recovered, his bowels up to to-day having acted regularly, and of themselves. The patient is, however, weak, and occasionally listless and heavy, as if his nervous system had sustained a severe shock.

Ordered a few compound rhubarb pills; oil to be taken at night.

July 11th.—The patient left hospital to-day a little weak, but feeling otherwise perfectly well; his bowels are regular, and his stools natural.

On July 26th he again applied for admission, suffering from symptoms similar to those he presented before, but in a very less degree; his bowels having been confined for a few days, and complaining of some pain in the abdomen. He states that since he left hospital, on 11th, he has had two or three slight returns of abdominal pain, and that on one occasion his left leg swelled to a large size. These symptoms, however, left him after lying in bed for a few days. His present complaints are evidently augmented by fear, as

he is very nervous about himself, and dreads a repetition of his late treatment. This, however, was not required, as, after a terebinthinate enema, a course of gentle purgatives, such as castor oil, administered every other morning, was sufficient to keep his bowels regular, and to free him of all pain.

This treatment was continued for about twelve days, and his strength and general appearance being much improved, he left hospital on 18th of August. Since then he has had no return of these attacks, and has been able to resume his work as a labourer.

In this case, so fraught with practical interest, there are some few points which particularly deserve attention.

In the first place, as to the immediate cause of the attack—what it was? In this is involved a question more easily asked than answered; for when no confirmation by dissection is afforded the actual cause must ever be clouded in a certain amount of obscurity, which no fancied diagnosis lightened by the light of a far-seeing imagination, can ever thoroughly disperse.

The suddenness and severity of the attack following so soon after the dose of epsom salts having been taken would at first almost point to the possibility of its being a case of poisoning.

Then, again, the fact of the pain being for the most part fixed in one locality, which in the first instance was relieved by the topical abstraction of blood, would be almost suggestive of enteritis; caused, perhaps, by an introsucception. Both these ideas are tenable for a time, but are not carried out by the after symptoms and progress of the case, as the pain both shifted its position, and though very intense the day preceding the application of galvanism, it had disappeared in four hours after the operation. To my own mind, taking into consideration the whole details of the case, is most strongly suggested the idea that the case was one of ileus, arising from a paralysed state of the muscular coat of portion of the great intestine. As all peristaltic action was absent the injections driven in by the force of the syringe were readily admitted past the affected portion of intestine; but were not again passed, from the loss of its normal muscularity. I should imagine that the violent peristaltic action produced by a large dose of sulphate of magnesia, and the irritation of the mucous coat which it sometimes gives rise to, may have been the primary cause of, or in some way connected with, this loss of vital power in the muscular covering of the colon.

The other point of interest is the happy success with which this

new mode of applying galvanism was crowned. It may safely be asserted that to its success the patient owes his life. This, then, is a matter of the deepest importance, as it furnishes the physician with a line of treatment worth trying in those cases where the ordinary treatment, such as was adopted in the early part of this case, has failed, as it often will. The acute suffering which it gives rise to, should, however, be borne in mind, as it is not every case which would be sufficiently strong to endure it without receiving future detriment.

As it has been but once tried in the Meath Hospital, and I believe was never before made use of in the United Kingdom, it would be presumption confidently to promise the same success in all future cases where it may be applied; but from the extreme severity of the symptoms in the case above detailed, and from the speedy and effectual relief it gave, it is not too much to hope that its application in future cases may be followed by equally happy results.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lectures on Epilepsy, Pain, Paralysis, and certain other Disorders of the Nervous System, delivered at the Royal College of Physicians in London. By CHARLES BLAND RADCLIFFE, M.D., Fellow of the Royal College of Physicians of London, Physician to the Westminster Hospital, and to the National Hospital for the Paralysed and Epileptic, &c., &c. London: John Churchill and Sons, New Burlington-street. 1864. Pp. 340.

DR. CHARLES BLAND RADCLIFFE, who has succeeded Dr. Brown-Séquard as Physician to the National Hospital for the Paralysed and Epileptic, is well known to our readers as an individual who for some years past has given close attention to the study of the physiology and pathology of the nervous system. Upwards of twelve years ago he published a small work,[a] in which his principal object was to show that it was necessary to revise the theory of muscular motion, and to consider muscular contraction as a physical process of a nature very different from that which physiologists had hitherto supposed it to be. Since that time his other published works, as well as his communications to the Royal Society, British Association, &c., show that he has kept pace with the advances of physiology in every particular which bears upon his favourite subject. When we consider how remarkable these advances have been, more especially in the department of electro-physiology—when we reflect upon the multitude of facts which have come to light since, in 1827, Nobili revived the long-dormant subject of animal electricity—when we contemplate the laborious and interesting researches of Matteucci, Du Bois-Reymond, Chauveau, and others of later years—and when we find a person thoroughly conversant with all these investigations, still after so many years adhering to his theory, and assuring us that the additional evidence supports his convictions as to the truth of the principle which he maintains,

[a] Philosophy of Vital Motion. 8vo. London: Churchill. 1851.

it is high time for physiologists fully, fairly, and impartially to consider such a theory, however much at variance with the ordinarily accepted notions. We propose, therefore, in the present notice of the work before us, to give our readers an analysis at once as concise and clear as we can of Dr. Radcliffe's theory of muscular motion, and the grounds on which it is based, and also of his views regarding the physiology of sensation, while we shall reserve for a future occasion our observations on that portion of his lectures devoted to the pathology and treatment of nervous disorders.

The current theory of muscular motion attributes this remarkable phenomenon to a vital property peculiar to muscle called *contractility*. This property, which physiologists generally conceive to belong exclusively to the sarcous elements of muscular tissue, is regarded as a vital endowment capable of being called into action in obedience to appropriate stimuli: it is said to be exhibited under two varieties, *passive contraction* or *tonicity*, and *active contraction;* normally it is supposed to be brought into play by the stimulus of nervous influence, and the contraction of a muscle is regarded as evidence of vital excitement, primarily of the nerve, and secondarily of the muscle, the molecules of which are thus made to attract each other. This theory, if such a doctrine can be called a theory, is obviously unsatisfactory to the scientific mind; it means nothing else than that muscular contraction is a phenomenon of which no physical explanation has been offered, and the term "vital endowment" is introduced to shroud ignorance. Muscular contractility is one of the last strongholds of the vitalistic school; and whatever defects the theory of Dr. Radcliffe may have it at least strongly recommends itself to the scientific physiologist in this, that it is a highly ingenious, we would say a masterly, attempt to bind together in a common bond a number of phenomena met with in the living organism, and of those which fall within the domain of physical science.

According to the theory of Dr. Radcliffe, there is in living muscle during the condition of repose or inaction a state of polarity which produces relaxation; and contraction is nothing more than the necessary result of the muscle being set free from this, and left to the operation of the attractive force which is inherent in the constitution of the muscular molecules. This molecular change in the muscular elements he supposes to be brought about, not by stimuli whose action calls forth the vital property of contractility, but by an alteration in a definite and intelligible manner of the

electrical condition of nerve and muscle. Perhaps we can most easily make Dr. Radcliffe's view, as thus stated, comprehensible to our readers by referring to the molecular changes which iron undergoes under the influence of electricity; the analogy is indeed striking, and must be admitted to be favourable to Dr. Radcliffe's view, although it must be remembered that in such matters analogy is often a deceitful guide. Mr. Joule, of Manchester, now a good many years since, showed that a bar of iron suddenly, and without any change of volume, gains in length and loses in breadth when it is charged with magnetism, and that it as suddenly returns to its former dimensions when its magnetism is discharged. If a bar of iron be placed in the longitudinal axis of a coil of insulated copper wire, and if then through this coil a stream of electricity be passed, say from a Daniell's battery of half-a-dozen cells, as every one knows, the bar becomes magnetized; let its length now be accurately measured, and then let the contact with the battery be suddenly broken, and immediately the bar will be found to have shortened itself. While magnetized the bar is elongated; when demagnetized a molecular change instantaneously occurs, which is accompanied by contraction. The molecules of the iron bar which in the magnetized condition correspond to those of muscle in the state of relaxation; and when, so to speak, the influence of volition or any other cause, demagnetizes the muscle contraction is the result. This theory, of which we wish to give our readers a definite idea by the aid of an analogy not in all respects strictly parallel, is obviously quite at variance with the current doctrine of muscular contraction; let us, however, adopt it provisionally, and proceed to inquire how far it is confirmed or contradicted by the evidence of ascertained facts; how far it is in harmony with the laws which govern the electrical currents in muscle and nerve, as well as with the various phenomena associated with muscular contraction.

We confess, on the threshold, that we feel great difficulty in attempting to lay before our readers an analysis of the evidence brought forward by Dr. Radcliffe in support of his theory, in the first four lectures of the work before us. It is not that the author has not collected his evidence with care, and arranged it with judgment. This he has done admirably. But, unfortunately, the subject is one concerning which great ignorance prevails. Comparatively few persons have been able to watch the progress of animal electricity; and few, consequently, can estimate the value, or justly appreciate the importance, even in a practical point of

view, of the facts brought forward by Dr. Radcliffe in his book. Conscious of this difficulty, we shall be pardoned if, in our observations, we speak in a fashion which may appear too elementary to those who are conversant with the subject.

Animal electricity is that kind of electricity which exists in certain animal tissues; it is present in our own nerves and muscles during life, and for a time after death, gradually disappearing as *rigor mortis* becomes established. That variety of animal electricity which is capable of being stored up in particular organs and emitted as a shock (as in the *torpedo*, *gymnotus*, &c.) has been known from time immemorial. That which is inherent in the nerves and muscles, and the existence of which may be proved without the intervention of any metallic substance, was discovered by Galvani; the critical acuteness of Du Bois-Reymond has succeeded in deducing the laws which regulate it.

Galvani not only discovered the fundamental physiological experiment of galvanism (voltaic electricity), properly so called, but also that of the electricity inherent in the nerves and muscles. These discoveries were at the time hidden in a confusion of circumstances; it is only in these later years that the genius of Du Bois-Reymond has raised animal electricity to a position in scientific interest at least equal to that of any other branch of electrical science. The history, indeed, of the rise and progress of animal electricity is a history unsurpassed in interest by anything that we know in the records of physical science. We could with great satisfaction enter at some length into a subject so inviting, but must be content simply to remind our readers of the leading facts. In 1790, the quick eye of a lady, who happened to be present in her husband's laboratory in Bologna, noticed the spasmodic action of the limbs of a skinned frog which lay near an electrical machine which was in action. She drew her husband's attention to the astonishing fact. Galvani's restless mind and naïve desire for knowledge led him on from this starting point to the performance of various experiments, in which results arising, on the one hand, from what we now call galvanic electricity, and, on the other, from animal electricity, were, for him, inextricably blended together. In the discussions which followed, Volta finally triumphed. Galvani died in 1798. Volta discovered the pile in 1799; and although Humboldt, who about this time had been a guest of Volta, proved with great precision the existence of the muscular current, yet the supporters of animal electricity were silenced by the discovery of the pile for nearly

thirty years. Within this period the discoveries of Oersted, Schweigger of Halle, and Nobili imparted great delicacy to the instruments for detecting electrical currents; and, with their help, Matteucci, Du Bois-Reymond, Chauveau, and others, have investigated the subject of animal electricity, not only giving their true value to the classical experiments of Galvani and Humboldt, but adding a multitude of new facts.

In passing on to a consideration of the separate propositions upon which Dr. Radcliffe rests his theory, we would beg of our readers to bear in mind that artificial electricity (galvanism or magnetism) is merely used as a means of *stimulating* nerve and muscle, so as to show what changes are thereby brought about in the electrical condition of these tissues. It is the electrical condition of these tissues which, in relation to Dr. Radcliffe's theory, is of importance, the electricity inherent in the nerve and muscle structure—in fact, the animal electricity. Moreover, we would add, in order to make the matter more intelligible, that Dr. Radcliffe thinks, and we are of the same opinion, that his view of the physiology of muscular motion and sensation may be much simplified by supposing that the primary electrical condition of living muscle and nerve is one of statical, and not of current electricity. The "muscular current" and the "nerve current" he regards as only secondary phenomena.

In his first lecture, Dr. Radcliffe, after some introductory remarks, deals with the subject of what may be called animal electricity proper, that is, with the electrical phenomena presented by living muscle and nerve during the state of rest; in doing so, he lays down a series of propositions, most of which are capable of proof by direct experiment, and of the truth of which any person possessed of a delicate electrometer may satisfy himself; a few of these propositions are inferences which the author conceives to be fairly deducible from the facts before him.

These propositions are as follows:—

"1. During the state of inaction the natural state of living muscle and nerve is one in which the longitudinal and transverse surfaces of the fibres are in a state of electrical antagonism, the longitudinal surfaces being electrified positively, and the transverse surfaces negatively.

"2. During the state of inaction the longitudinal and transverse surfaces of the fibres of living muscle and nerve present different degrees of electric tension at different points, the longitudinal surface being most positive at the point most removed from the transverse surface, and the

transverse surface most negative at the point most removed from the longitudinal surface.

"3. Under certain circumstances the longitudinal and transverse surfaces of the fibres of living muscle and nerve have their electrical relations reversed, the longitudinal surface becoming negative, the transverse surface positive.

"4. During the state of inaction the fibre of living muscle and nerve presents unmistakable signs of current electricity if two points of dissimilar electricity or of dissimilar electric tension be included in the circuit of the galvanometer, but not so if the two points thus included are similar in electricity, or similar in electric tension.

"5. During the state of inaction living animal tissues are found to be capable of acting upon the gold-leaf of an electroscope, and of furnishing other signs which show that the natural electricity of these tissues is characterized by high tension.

"6. The natural electricity which is present in living muscle and nerve during the state of inaction is altogether absent in rigor mortis.

"7. There is reason to believe that the primary electrical condition of living muscle and nerve during the state of inaction is that of statical electricity, and that the 'muscular current' and the 'nerve current' which may pass from the muscle or nerve during the state of inaction are only secondary phenomena.

"8. It is possible that the elongated state of the fibres of living muscle may be due to the presence of the electricity which is inherent in them during the state of inaction.

"9. It is possible that the state of the muscular fibre in rigor mortis may be the necessary consequence of the extinction of the natural electricity of the fibre."

The last three propositions are inferences which, as we have already said, Dr. Radcliffe conceives to be deducible from the now ascertained facts. They are obviously important links in the chain of reasoning, and involve the conclusion that the natural electricity of living muscle and nerve, during inaction, is in a statical and not in a current condition. Moreover, from the foregoing propositions, Dr. Radcliffe ventures to assume that the electrical current which passes into the galvanometer from the nerve and muscle during these experiments is a secondary and not a primary phenomenon; and he finally concludes from these facts that the presence of the natural electricity of muscle *may* give rise to the state of muscular relaxation by keeping the muscular molecules in a state of electrical tension; and that rigor mortis is due to the

disappearance of this electricity, whereby the physical attraction of the muscular molecules is allowed to come into play.

In the early pages of his second lecture, Dr. Radcliffe speaks of the electrical phenomena presented by muscle and nerve during the state of action; he details experiments (some of which, of the most striking and interesting nature, may be repeated by any person with no more expensive instrument than the legs of some frogs) to show—first, that muscular contraction is accompanied by a discharge of electricity analogous to that of the torpedo; and, secondly, that the same is true for motor nerve during action; thirdly, he shows, by the aid of the galvanometer, that the electricity which, as we have already seen, is present in muscle during the state of rest, vanishes almost entirely during the state of action; and, fourthly, that this is also true as regards the electricity present in motor nerve during the quiescent state. From these premises our author feels justified in concluding that ordinary muscular contraction, like rigor mortis, *may* be dependent upon the absence of the natural electricity which we know to be present in living muscle during the state of rest and relaxation, and which direct experiment proves to disappear during the state of action.

Having shown, then, how far his theory is confirmed by the ascertained and admitted facts of electro-physiology, Dr. Radcliffe next proceeds to examine how far it is in harmony with various phenomena associated with muscular contraction, which, to say the least, are unsatisfactorily accounted for by the current doctrine on this subject. In order to do this, he enters into a careful investigation of the following topics:—

1st. The part which animal electricity has to play in the process of muscular motion.

2nd. The part which the blood has to play in this process.

3rd. The part played by "nervous influence" in bringing about muscular action.

4th. The part which certain other agents—as light, heat, cold—play in this process.

In his concluding lecture of that portion of the book which at present occupies us, Dr. Radcliffe deals with the subject of the physiology of rythmical muscular motion, as met with in the cardiac movements, those of the intestines, and of respiration.

In the discussion of each and every one of these topics Dr. Radcliffe shows a profound knowledge of the physiology of the subject of which he speaks. Each proposition is simply stated, and

then fairly sifted, with a degree of brevity, precision, and, above all, a freedom from dogmatism which it is rare to meet with, especially where views are set forth with the enthusiasm of originality. To give a just idea of Dr. Radcliffe's line of argument, or, rather, to lay before the reader the series of facts on which his arguments are based, would be to reproduce his lectures: there is not a superfluous word. It must for our purpose suffice to give the primary deductions drawn from the evidence advanced. These appear to be:—

"That there are unmistakable signs of natural electricity in living nerve and muscle during the state of rest.

"That the natural electricity which is present in living nerve and muscle during the state of rest is in the statical, and not in the current, condition.

"That living muscle, when left to itself, is kept in the state of relaxation by the statical action of its natural electricity.

"That an electrical discharge analagous to that of the torpedo is developed in the neighbourhood of nerve or muscle during the state of action.

"That a nerve or muscle is for the moment deprived of its natural electricity whenever it is thrown into the state of action by the shock of a coil-machine, or by any other artificial means.

"That the action of a motor nerve in producing muscular contraction is one which may deprive the muscle of its natural electricity; for it may be supposed that the muscular fibres lie near enough to the nerve-fibres to be within the range of the electrical discharge (analagous to that of the torpedo) which is developed in the neighbourhood of the nerve during the time of nervous action, and that the muscular fibres are deprived of their natural electricity by the shock of this discharge, in precisely the same way as that in which they are so deprived by the shock of the current of the coil-machine.

"That muscle deprived of its natural electricity passes into the state of contraction, because muscle so deprived is left free to yield to the action of the attractive force which is inherent in the physical constitution of the muscular molecules.

"That ordinary muscular contraction is *not* continuous, because the electrical condition of living muscle is such that immediately after the state of contraction is brought about by the loss of electricity, the opposite state of relaxation is restored by the recovery of electricity.

"That muscle and nerve have ceased to exhibit any sign of natural electricity before the occurrence of rigor mortis.

"That the contraction of rigor mortis is continuous, because the attractive force which is inherent in the physical constitution of the muscular molecules is then no longer antagonized by the natural electricity of the muscles and nerves.

"That ordinary muscular contraction and rigor mortis are only different aspects of the same process.

"That there is no ground for believing that a vital property of irritability has to do with the action of a motor nerve, or that a vital property of irritability or tonicity is concerned in bringing muscle into the state of contraction."

Dr. Radcliffe deals very briefly with the physiology of sensation; such a subject obviously cannot be treated experimentally to anything like so full an extent as the kindred topic; we must look to pure pathology rather to elucidate the perplexing problems connected with sensation and pain.

Dr. Radcliffe, however, shows by experiment, and a very striking experiment it is, that in the case of a sentient nerve, as in the case of a motor nerve, the nerve loses electricity in passing from what must be considered its state of rest into its state of action. Secondly, he adduces an equally remarkable experiment of Matteucci's to show that the change in a sensory nerve when sensation is produced by the action of voltaic electricity and the change in a motor nerve when muscular contraction is produced by the same means are exact equivalents. From these facts he concludes that there is reason to believe that no essential difference exists between the action which issues in sensation and the action which issues in muscular contraction; in fact, that the production of sensation and the production of muscular contraction differ only in this—that the electrical discharge analogous to that of the torpedo, which is developed in and near the nerve in the state of nervous action, happens to tell upon sensorial ganglionic cells in the one case and upon muscular fibres in the other.

We are, indeed, very well aware what a meagre and imperfect sketch we have here given of the physiological portion of Dr. Radcliffe's lectures. Our principal object has been, however, to induce those of our readers who feel an interest in this important subject, to study the work for themselves; we assure them that a careful perusal of it will amply repay them. Although the subject is one not familiar to many, and one which requires more than a superficial glance, yet everything has been done by the author that could be done to make it readily comprehensible. The book is well brought out, and illustrated by woodcuts, which serve very much to simplify experimental details. For ourselves, we can say, with truth, that we have read it with great pleasure and great profit.

Notes on Hospitals. By FLORENCE NIGHTINGALE. Third Edition, Enlarged, and, for the most part, Re-written. London: Longman, Green, Longman, Roberts, and Green. 1863.

IT is not our purpose in the following remarks to add even one tributary stream to the ever-swelling torrent of public applause which follows the name of Florence Nightingale. Notwithstanding a nation's fears, Providence has graciously spared her most useful life; and long after her truly honourable career has terminated, shall men and women yet unborn revere in her character the true disciple of our GREAT EXEMPLAR "who went about doing good."

Nor is it our intention to analyze this book so as to set a synopsis of its contents before our readers. Many of them have doubtless read it, and are quite familiar with its teachings. We wish to select for consideration certain portions of a remarkable work, the very title of which commends itself not only to medical officers of hospitals everywhere, but to the thousands—ay, millions of the general public who feel an interest in the matter.

If we may compare Miss Nightingale's treatise to a sermon, and herself to a preacher, we shall begin by stating her text to be—a hospital "should do the sick no harm." She considers this aphorism necessary, "because the actual mortality *in* hospitals, especially in those of large crowded cities, is very much higher than any calculation founded on the mortality of the same class of diseases among patients treated *out of* hospital would lead us to expect." As in her *Notes on Nursing*, so in the present treatise, the two chief heads of discourse are fresh air and cleanliness under every imaginable form. These are found in the various chapters into which the book is divided; and whether we read of the "Sanitary Condition of Hospitals," of the "Defects in existing Hospital Plans and Construction," of the "Principles of Hospital Construction," of "Improved Hospital Plans," of "Convalescent Hospitals," of "Children's Hospitals," of "Indian Military Hospitals," of "Hospitals for Soldiers' Wives," of "Hospital Statistics," or of that most important APPENDIX "On Different Systems of Hospital Nursing," we feel equally convinced that Miss Nightingale esteems fresh air more highly than gold, and prizes cleanliness as the very next thing to Godliness.

From statistics which we need not reproduce, and the truth of which cannot be denied, we find "that the most unhealthy hospitals

are those situated within the vast circuit of the metropolis; that the next lower death rate takes place in hospitals in densely populated, large manufacturing, and commercial towns, and that by far the most healthy hospitals are those of the smaller country towns."

The suggestion immediately occurs—is a hospital of any use? This indeed has been gravely doubted, and who will say such doubts are groundless? For the present we affirm the question, and say they are of untold advantage; while it is too true that as the proper function of a hospital is to cure and not to kill, some scarcely answer the desired end by reporting an annual mortality of one death for every bed occupied.

In reply to the question "What, then, are those defects to which such results are to be attributed?" Miss Nightingale observes:—"I should state, at once, that to original defects in the sites and plans of hospitals, and to deficient ventilation and overcrowding accompanying such defects, is to be attributed a large proportion of the evil I have mentioned."

In discussing the idea that the unhealthy condition of some hospitals is due to "infection" or "contagion" Miss Nightingale maintains the *preventibility* of infection, and therefore the preventibility of many deaths from zymotic diseases—which we often lament in the cases of medical men, hospital nurses, and medical students. Instancing the contagion supposed to inhere particularly in *feathers* she remarks, "that, according to quarantine laws, a live goose may be safely introduced from a plague country; but if it happen to be eaten on the voyage its feathers cannot be admitted without danger to the entire community." Hence she exhibits the endless absurdities connected with this doctrine, and using the term "contagion," to express communication of disease from person to person by *contact*, she affirms "there is no proof, such as would be admitted in any scientific inquiry, that there is any such thing as 'contagion.'" She also expresses her belief that "there is no such thing as *inevitable* 'infection.'"

We cannot pretend to decide this question; for the truth is there is much to be said on both sides. In the last number of this Journal, Professor O'Connor, of Queen's College, Cork, argued with ability on Miss Nightingale's side of it; and no person who has read his essay can deny the fairness of his argument. He viewed it *practically;* and were it not for the importance of the results of believing one side or other, a medical man might well remain, on this subject at least, a professional infidel. Miss Nightingale comes

to the point at once, and argues that as there is no such thing as contagion, and as infection is not inevitable, it can be prevented by securing free circulation of fresh air and cleanliness, and by avoiding overcrowding in hospital wards. In keeping with this idea of free dilution of infected air she would not tolerate wards for "infectious" diseases, as she believes these may be most advantageously treated in the general wards among other sick.

This is a *vital* question, and one which can be decided only by very extended and frequent observations. As our readers are well aware, the principle has been advocated by Professors Christison and Hughes Bennett, and was put in practice in the Edinburgh Infirmary several years ago. According to Dr. Murchison (*Treatise on Continued Fevers*, pp. 609, &c.) it was not found to answer; and on referring to our memoranda of a visit to that infirmary in 1863, we find the following:—"Particularly noted the *fever wards* which had very high roofs, were well ventilated, and had thermometers hanging against the walls—the temperature at 65° Fahr. Scarlatina cases are put in the fever wards, but cases of small-pox are kept separate."[a] The plan of distributing fever patients in the general wards, also, formerly prevailed in the infirmaries of Glasgow and Manchester (Murchison); but on a visit to both places last year we found the contrary practice in operation; as also in the Sick Children's Hospital in Edinburgh, where the fever wards are not only isolated, but are approached by a separate staircase. Dr. Murchison's conclusions are weighty and carry conviction to many physicians; they are:—

"1. Cases of pythogenic fever may be distributed in the wards of a general hospital with impunity.

"2. It is doubtful if cases of typhus ought ever to be admitted into a ward with other patients; even in no larger a proportion than one in six, there is danger of the disease spreading.

"3. Fever hospitals are absolutely necessary in all large towns liable to epidemics of typhus, and they ought to be provided with the means of rapid extension, in the event of an epidemic breaking out.

"4. There is no evidence that in a well ventilated fever hospital the mortality from continued fevers is greater than in a general hospital.

"5. In proportion to the number of cases of typhus treated, the

[a] In a recent visit (October, 1864) we find a partial exception to this statement, viz., in the "clinical" wards, where a small per centage of "infectious" cases is distributed for the purposes of clinical teaching. In Glasgow it is otherwise, as stated in the text.

danger of the disease spreading is much less in the plan of isolation than in that of mixing.

"6. Cases of pythogenic fever, scarlatina, and typhus ought not to be mixed in a fever hospital."

Now while these conclusions are diametrically opposed to the dogma of Miss Nightingale, yet they are not really opposed to the principle of *dilution* on which her dogma is based; Dr. Murchison's conclusion, No. 4, meets the case, and is founded on confessedly strong facts.

In the *Medical Times and Gazette* for September 10, 1864, we find an account of the experience derived from the recently established New York Fever Hospital. It seems that heretofore fever wards had existed in Bellevue Hospital, and the result was believed to have been decidedly injurious. At any rate we are now told:—"If any further evidence were needed of the intense contagiousness of typhus than that furnished by the past history of fever in Bellevue, we have it in the records of the fever hospital during its short existence. The fever cases are at present placed in tents on Blackwell's Island. On entering the hospital the patient is bathed, and supplied with a clean hospital shirt, his own clothing being removed and washed. The tents are near the water's edge, the sides are raised, and the sweep of fresh air is constant and generally very strong over the floor and beds. No perceptible odour is ever noticed in or around the tents, nor does there seem to be the slightest difference between the internal and the external air. And yet no less than six unprotected attendants, who did not even sleep in the tents, have contracted the disease within this short (two months) period." The lessons deduced from this account are:—1. Typhus is contagious. 2. It should be isolated. 3. None but protected persons should ever be employed to attend fever cases; and 4. Open air treatment is the best. This last conclusion was arrived at because in the fever wards of the Bellevue Hospital the mortality in typhus was 11 per cent., while at the Fever Hospital it was only 6·1 per cent.

According to Dr. Murchison the mortality in Britain is "one in five attacked;" while it certainly is not so much in this country. From the Cork Fever Hospital reports we find that the mortality in typhus and typhoid in 1862 was "less than 9 per cent;" and in 1863, when, during an epidemic, the inmates numbered 1,685, and "the majority of patients were found to labour under the worst forms of typhus," the mortality was only 5·50 per cent. How much

of this is due to plenty of light and pure air we know not, but as we have had opportunities of ascertaining that plenty of both were in use in that institution, its friends may reasonably claim the advantage of adhering to Miss Nightingale's doctrines to some extent.

With regard to contagion in the New York Fever Hospital while plenty of air was had, perhaps Miss Nightingale would find the case not exactly so to her acute perception. There is scarcely any *fact* about which we find such diverse testimonies; witness the altercations between railway passengers as to shutting or opening a carriage window, and domestic differences of a like nature between what quaint Dr. Watts calls "children of one family."

While we certainly think Dr. Murchison's conclusions are warranted by an experience to which Miss Nightingale lays no claim, we cannot agree to No. 6—"cases of pythogenic fever, scarlatina, and typhus ought not to be mixed in a fever hospital." Our own experience, and we have had some in a fever hospital, goes far to prove the contrary so far as Ireland is concerned. We have seen, for example, cases of diphtheria, of bad erysipelas of head and face, of scarlatina maligna, of typhus, of typhoid, and of acute bronchitis, all treated successfully in one ward; and to a greater or less extent this must occasionally be the case when patients are sent into hospital as having "fever," which, of course, they have; but how much more they may have in reserve dispensary doctors generally say not.

Many of us have been agreeably surprised at the neatness and home-like care for the sick which greets them on their first visit to a continental hospital; while in this country we sadly want more of this sort of thing. In the Edinburgh Infirmary the visitor will see the walls covered with appropriate, not with controversial, texts of Holy Scripture, with pictures of events in Sacred History, and of notable men of the day. In the Sick Children's Hospital in the same city, he will find the little inmates amused with toys, which form part of the standing stock of the establishment; and in Glasgow Infirmary he will see, and *smell*, bouquets of flowers on the tables or chimney-pieces of the wards, while the solemn and orderly arrangement of its dead-house at once befits mortality and immortality, and whispers in stillness—"Memento mori." Many will perhaps not consider all these things suitable for all our hospitals; some of them, however, will unquestionably aid the medical attendant in restoring health; and, so far as flowers are concerned,

they have the additional advantage of purifying the air by giving out oxygen in the day time, and absorbing carbonic acid. At night, when the reverse process goes on, of course they should be removed.

Miss Nightingale lays down the doctrine that "unless the air *within* the ward be kept as fresh as it is *without*, the patients had better be away." In the general sense this is true; but except in savage life, or in great privation, we can scarcely expect to see this idea realized. What she means we shall give in her own words:—"In the wooden hospital huts before Sebastopol, with their pervious walls and open ridge ventilators, in which the patients sometimes said that they 'would get less snow if they were outside,' such a thing as 'catching cold' was never heard of. The patients were well covered with blankets, and were all the better for the cold air."

We think we can beat this by instancing the conduct of a man who did much to ruin our profession—that is, to make it needless. There is in possession of our College of Physicians a picture of Dr. Smith, an Irish historian of celebrity. In his *History of Cork*, second edition, Dublin, 1774, we read:—"Dr. Lyne, an Irish physician, who died some years ago of the small-pox, aged eighty-five, lived at a place called Arloom, in the half barony of Bere, in this county. It was remarkable, that for fifty years together nobody died out of his house, though he always had a numerous family. His house was built in an odd manner, every window had another opposite to it, none of which he ever suffered either to be shut or glazed, but were continually kept open, without any defence against the weather. The room the doctor lay in had four windows, two open on each side his bed. Upon his death, his son glazed all the windows, since which time there were several buried out of the house."

While we are on the subject of air and ventilation, a reference to Cork reminds us of the New County Infirmary lately opened in that city. By reference to the plans kindly furnished by the courtesy of Dr. W. C. Townsend, its senior physician;[a] we perceive the floors are two—ground and first; the "administration" is separate from the wards. These, four in number, are each 140 feet long, 20 wide, and 12 high, and are constructed for 108 patients. Each patient on the ground floor has 1,200 cubic feet of air; while

[a] These plans were drawn by Mr. Fitton clinical clerk to the hospital.

those up-stairs have 1,400 feet. It may be said to consist "of two pavilions in line," the administration being in the centre. The fresh air is plainly sufficient here, as Miss Nightingale admits, that for each patient from 1,000 to 1,500 cubic feet is sufficient; the latter quantity being the *ultima thule;* while the principles laid down in her *Notes* appear to have been largely acted on in the construction of this hospital.

On the subject of "Defective Hospital Laundries," as fully treated by Miss Nightingale, we cannot dilate further than to strongly recommend a most complete washing machine which we have seen in operation in a charitable institution across the Channel. It was invented by Mr. Cranston, proprietor of the Waverley Hotel, Edinburgh, who has, we believe, a patent for it.

We cannot pause to discuss "Principles of Hospital Construction," "Improved Hospital Plans," or "Convalescent Hospitals," which last people agree ought to be erected somehow. On "Children's Hospitals" Miss Nightingale says some strong words. She prefers special hospitals for children, but protests against children's wards in a general hospital, because then some of their bad habits are likely to be overlooked; and while this defect may be obviated by their being mixed with the adults; yet, in the latter case, some bad habits may be acquired by children which they would otherwise escape; and some knowledge might be gained of which they are better ignorant. They also lose the special provisions for exercise and recreation which a children's hospital would of course supply.

We pass over the "Indian Military Hospitals," already rendered infamous by this book; and without touching on "Hospital Statistics," or "Hospitals for Soldier's Wives," we shall conclude with some observations on the Appendix "On Different Systems of Hospital Nursing."

With this subject Miss Nightingale is more conversant than any other woman in the United Kingdom; and she thus writes:—

"The methods of nursing the sick adopted in the public hospitals of Europe may be distinguished under five classes:—

"1. Where the nurses belong to a religious order, and are under their own spiritual heads; the hospital being administered by a separate and secular governing body.

"*Examples.*—The Hospitals of Paris, of King's College Hospital, London.

"2. Where the nurses are of a religious order, the head of which administers both order and hospital.

"*Examples.*—The Protestant institutions of Bethanien at Berlin, Kaiserwerth on the Rhine, many Roman Catholic institutions at Rome, and all over Europe, also Anglican sisterhoods at home.

"3. Where the nurses are secular under their own head; the hospital having its own separate and secular government.

"*Example.*—The hospitals of London.

"4. Where the nurses are secular, and under the same secular authority as that by which the hospital where they nurse is governed.

"*Examples.*—The great general hospital at Vienna, the Charité at Berlin.

"5. Where the nurses are all men and seculars, and under the same secular male authority as the hospital.

"*Example.*—The military hospitals of Germany, and, till a recent period, of England, France, and Russia."

Miss Nightingale duly discusses the merits and demerits of all these plans; and, observing that she deals only with systems of nursing as *systems*, thus sums up:—

"Case 1. There is a higher average care of the sick, and a higher universal sense of morality among hospital sisters, Protestant and Roman Catholic, provided the hospital authority be a secular one. Case 2. There is a lower average care of the sick, although an equally high morality, among hospital nuns, Protestant and Roman Catholic, if the hospital authority be not a secular one. Case 3. There is a far greater average care of the sick, although a lower morality, among nurses under a secular head, the authority of the hospital being a secular and separate one, than in Case 2; and there is a somewhat higher average care of the sick in Case 4 than in Case 2, and no morality at all, but an awful destruction of both life and soul among nurses, where both nurses and hospital are under the same secular (male) authority. Case 5. There is no care of the sick and no morality, nor even discipline, in hospitals where the nurses are men, and where both nurses and hospital are under the same secular (male) authority."

She looks on this last as the worst state of things, and Case 2 as the next worst, because the idea of the "religious order" is rather to prepare the sick for death—of the secular to restore them to life. Union of the two she thinks best.

A *Discourse on Hospitals Past and Present*, delivered by Dr. S. Martyn, at the Bristol Institution, March 17, 1862, is noticed in a

leader on "Hospital Nursing," in the *Lancet* of September 10, 1864. Bearing in mind the two plans followed—sisterhoods and technical training of nurses—we find it stated that the Kaiserwerth plan (Case 2), does well. There are twenty-six institutions in England, more or less analogous to the Kaiserwerth type, *e. g.*, "S. John's House," in London, which has a master in holy orders, a lady superintendent, and two physicians, manages the nursing in King's College Hospital. The hospital pays the "House" £1,000 a-year, and is provided with all the female domestics, twenty-six nurses, a number of probationers in training, and six lady superintendents. This system has lasted six years, and has worked well. The committee do not interfere with the selection or discharge of nurses. The latter have a common sitting-room, offices for washing, &c. Each "sister" has a bed-room, while the nurses sleep in associated dormitories, with beds separated by wooden partitions, and a curtain at the end of each. All dine in the basement; the sisters sitting at a cross table.

In June, 1860, University College Hospital was entrusted to "All Saint's Home," and the report is highly favourable to the nurses. Those off duty have a common room and a library; their bed-rooms are associated, and on the upper floor.

St. Thomas' Hospital is nursed by Miss Nightingale's training institution, which trains women, and then gets them places. Probationers are not taken for less than a-year, and the cost of their maintenance (£10, and 10*s.* 6*d.* per week for board) is defrayed out of the Nightingale fund, the committee of which have arranged with S. John's House to train annually, at King's College Hospital, midwifery nurses to attend the poor of country parishes, under surgical and clerical direction.

Miss Nightingale's censure of the nursing system, still too common in our military hospitals, we know by experience to be deserved; and we can also, from experience, concur in her censure of the system, still the rule with us, of employing hireling nurses of more or less ignorance, who have often in the hour of nature's extremity sipped the "aqua vitæ" of the fever patient, and who are seldom suspected of being actuated by moral principle, or by a sense of duty.

From what we know of the Irish hospitals which are administered by religious orders, we are inclined to differ from Miss Nightingale's estimate of the system. In Ireland these sisterhoods are as yet confined to the Roman Catholic Church; and though as such we are

not ourselves personally prejudiced in their favour, we cannot but express our earnest wish that those who view these nursing systems unfavourably would do them the justice of looking closely into them, and seeing how far they act on the only principle on which Miss Nightingale very properly thinks they can safely stand—that of organizations best calculated to do *work*.

We say advisedly, it is greatly to be regretted that in the numerous hospitals of this city, and of our large provincial towns, no Protestant sisterhood is employed as in England, at Kaiserwerth,[a] and elsewhere. There is ample room for trying the several systems side by side; and while it will be admitted that the best form of such an organization is not an unmixed good, it is equally true that the worst is far removed from an unmixed evil.

By the courtesy of the lady superintendent, we have visited the only Protestant institution in Ireland founded on the Kaiserwerth model. "S. Stephen's Orphanage," in St. Stephen's-green, in this city, or, as we should correctly call the entire institution,[b] "S. Stephen's Deaconess' Home," is eminently calculated to engage in this Christian work of doing good, and to prove the superiority of organized strength and method, over ill-directed and scattered personal effort.

It is high time that ignorant, though well-meant prejudice should yield to sober experience; and that we should gladly offer facilities to every organization which tends to enlarge the usefulness of our profession, and to make it more truly the healing art.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Vol. XLVI. 1863. 8vo, pp. 225.

THE present volume contains but twenty papers, and these are, with some exceptions, less important than usual.

[a] For a full account of this astonishing institution, see Good Words for February and March, 1861; also, A Residence of Nine Months in the Deaconnesses Institutions of Kaiserwerth, Strasburg, and Mülhausen, by Miss Mary Myles. Dublin: Geo, Herbert. 1862.

[b] Beside the nursing of the sick, not yet in operation, the objects embraced by this institution, and now in active work, are the care and training of poor female orphans, the education of young ladies, and the parochial visiting of the sick and poor.

I.—*Account of a Recent Remarkable Case of Scrotal Elephantiasis, in which the Tumour was Removed.* By JOHN WIBLIN, F.R.C.S., Medical Superintendent of Quarantine, Southampton.

THE patient in this case was an Englishman, forty years of age, He had a double rupture; and when he came under notice, the disease, which had commenced in 1848, three months after contracting syphilis, had produced such an abnormal growth of the prepuce and scrotum, that they were found to weigh more than fifty pounds, and had acquired the following dimensions:—

"*Preputial Growth.*—Length, 16 inches; circumference, 13 inches.

"*Scrotal Growth.*—Vertical circumference from the symphisis pubis, following the raphé of the scrotum to within 2 inches of the anus, 3 feet 6 inches; lateral cirumference, 3 feet 4 inches."

The tumour was removed by Mr. Wiblin, by an operation occupying about twenty-one minutes, and chiefly remarkable for the small amount of hemorrhage that occurred. This immunity from bleeding was no doubt partly due to the use of a clamp, suggested and applied by Mr. Spencer Wells, and to the efficiency of the gentlemen who assisted at the operation; but mainly due to the adoption of a plan first suggested by Mr. O'Ferrall, of this city, whose name, however, Mr. Wiblin does not mention. This plan, which has been used by many surgeons with very beneficial results, consists in elevating the tumour above the level of the body, and keeping it so for some hours before the operation, so as to empty its veins as completely as possible. In removing the tumour the testicle of one side was wounded before it was recognized, and had to be removed. The hernial sac of the same side was opened also, but its contents were not injured; they were, however, in an unhealthy state, and became gangrenous, and the patient died on the sixth day. The paper concludes with a tabulated summary of the chief recorded instances of the affection, and a plate exhibiting the steps of the operation.

II.—*Supplement to a Paper entitled an Analysis of* 162 *Cases of Ovariotomy which have Occurred in Great Britain, published in Vol. XXXIV. of the Medico-Chirurgical Transactions.* By ROBERT LEE, M.D.

This is only a brief notice of a paper presented to the society by Dr. Robert Lee, which the Council would not allow to be read.

Dr. Lee asserts that as all the cases of recovery from ovariotomy have been published, and many of those which have terminated fatally have remained unpublished, no practical conclusions can be drawn from what are called the statistics of ovariotomy, and which are, he says, only calculated to mislead. Of what operation, we should like to know, have the statistics been more fully and fairly published than have those of ovariotomy.

III.—*Case of Poisoning by Oil of Wormwood (Artemesia Absinthium).* By W. Smith.

IV.—*A Contribution to the Natural History of Hereditary Transmission.* By H. Dobell, M.D.

An account of a peculiar malformation of the hands affecting some members of five generations.

V.—*Case of a Woman with Three Hands, Illustrated by Analogous Malformations in the Lower Animals.* By J. J. Murray, F.R.C.S.E.

VI.—*On the History and Progress of Ovariotomy in Great Britain; with Observations Founded on Personal Experience of the Operation in Fifty Cases.* By T. Spencer Wells, F.R.C.S., &c.

This paper was written in November, 1862, and we have reason to believe Mr. Wells' present experience is derived from more than double the number of cases here stated. The paper opens with a history of the operation, showing that it was first suggested by William Hunter, then advocated by John Bell, and performed for the first time by E. M'Dowell, a pupil of the last-named teacher, who transmitted a report of his case to his master. Bell died before it reached him, but it fell into the hands of Lizars, who published it seven years afterwards in the 32nd vol. of the *Edinburgh Medical and Surgical Journal.* Mr. Wells traces in brief terms the further history of the operation, showing that it languished till he took it up in 1857.

The cases on which the present paper is founded are divided by the author into three series, viz:—

I. In which ovariotomy was completed. 50 cases—33 recoveries; 17 deaths.

II. In which ovariotomy was commenced, but not completed. 3 cases—no deaths from the operation.

III. In which an exploratory incision was made in aid of diagnosis. 3 cases—1 death.

The details of these cases are summarized in the tables Mr. Wells gives, and he concludes with the following observations:—

"I shall, therefore, conclude by referring to the condition of the patients who have recovered as a proof that when they escape the immediate dangers of the operation, their health becomes remarkably good.

"It may be seen by reference to the table that one patient who recovered died ten months afterwards of cancer of the peritoneum, and one two years afterwards of hemiplegia; but all the others have maintained a condition of vigorous health. Last May, M. Nélaton saw several patients upon whom I had operated in 1859, 1860, and 1861. He examined them very carefully, and was very deeply impressed by the perfect health they enjoyed. Menstruation has returned in many cases with perfect regularity, and one patient bore a healthy child afterwards. As many of these women, now young and healthy, who are fulfilling their various duties in domestic service, or in the home life of single ladies, or as wives and mothers, and who are likely to continue to do so for many years, would in all probability have died a miserable death, months or years ago, had not their lives been saved by ovariotomy—it is for the Fellows of this Society to determine whether an operation which has led to such results is still to be stigmatised as unjustifiable—whether they who perform it are necessarily open to the reproach that they do so rather for their own selfish purposes than for the good of their patients—whether they who. in the face of evidence sufficient to convince any unprejudiced mind, continue to withhold from their patients a tried and approved means of curing a disease otherwise incurable and certainly fatal, are not open to a still more serious reproach—whether it does not become us (as men of science who practice our art not for our own advantage only, but with the earnest desire to do the very best that can be done for those who are confided to our care, or who trust in our knowledge, our skill, and our honour) no longer to oppose or condemn this operation, but rather to study its past history—to regard it with pride, as an offspring of British genius, cultivated by British industry—and to aid its future progress by perfecting our means of diagnosis; by ascertaining the conditions which should in any case encourage us to recommend the operation, or should deter us from doing so; and by investigating the avoidable or removable causes of excessive mortality, reduce it to that comparatively low proportion to which I feel confident it may and will be reduced, and thus render ovariotomy in each coming year more honourable to British Surgery, and more useful to Mankind."

VII.—*Case of White Fibro-Serous Discharge from the Thigh.* By A. B. Buchanan, M.D., F.F.P.S., &c.

This case is of the same character as those described by Drs. Carter and Waters in the previous volume of the *Transactions*, and of which we gave a full account in our issue for November, 1863 (Vol XXXVI., p. 413). There was the same white fibro-serous discharge from the upper and inner part of the thigh—in this case of a woman. Of this fluid Dr. Buchanan collected five ounces in an hour; but he believes that when the woman was moving about, it would have amounted to fully ten ounces in an hour. The fluid was like milk; sometimes more or less serous or opalescent. It coagulated spontaneously, separating into serum and clot. The clot entangled numerous cells and nuclei, and some oil globules. Dr. Buchanan refers to several similar cases that have been recorded, and proceeds to discuss the pathology of the affection. The assertion, that the fluid is milk, is disproved by the chemical and microscopical characters it presents. Dr. Buchanan believes it is not chyle, as was suggested by Dr. Carter, but that it is the white serum of the blood transuded through the capillaries of the part, the cells and nuclei being epithelial elements, produced in small numbers from the sudoriparous glands, or perhaps occasionally secreted by the rete mucosum of the excoriated surfaces.

Dr. Buchanan considers the disease to be "a rare functional affection of the glandular apparatus of the skin," accompanied, as eczema so often is, and probably inseparably connected, with a retarded capillary circulation from the varicose condition of the veins of the limb, and he proposes to limit his treatment, at present, to perseverance, as far as practicable, in the use of the elastic stocking, with the local application, if necessary, of astringent powders, and an occasional recourse to tonics.

This paper is illustrated by a plate, showing the cutaneous surface of the thigh, with the discharge flowing, and the cellular elements in the coagulum. It derives additional importance from the light it throws on cases of so-called chylous urine.

VIII.—*Observations upon Syphilis, in its Manifestations as a Constitutional Disease.* By J. A. Marston, M.D., Royal Artillery.

In a paper in last year's *Transactions*, Dr. Marston described the primary manifestations of syphilis. In this he describes the secondary and tertiary symptoms. He is a believer in the two

forms of syphilitic sores—the soft, non-infecting; and the indurated, infecting, or true syphilitic sore; and it is the symptoms following the latter that he now describes. He traces the evolution and succession of syphilitic symptoms among soldiers as follows, but he does not mean to assert the course is always so regular:—

"After the true syphilitic primary sore upon the penis, the inguinal glands commence to become symmetrically enlarged and indurated, at a date corresponding pretty accurately with that of the induration appearing in the chancre. These chains of inguinal glands remain so affected for a very long time, and in spite of a course of mercurials, and hence offer a reliable test as to an infection with syphilis at a previous date.

"The earliest constitutional occurrences after these are—a gradually advancing chloro-anemia, with, frequently, an engorgement of some of the cervical glands (particularly those in the posterior and lateral aspects of the cervical region), and vague muscular pains, simulating rheumatism. The anemia becomes early marked, but it is obviously difficult to define the exact date of its appearance, or to say how much may be due to hospital treatment, &c.

"Enlargement of the posterior cervical glands I have traced as early as the fifth week from the date of the appearance of a primary sore, but it is generally nearer eight to twelve weeks that these can be discovered. They are much less frequently affected, and remain enlarged for a shorter period than those of the inguinal regions, and differ from them in feeling swollen only, without that well-defined hardness present in the latter.

"The rheumatic, or osteocopic pains are not always nocturnal only in character, and vary very much in degree and amount. They sometimes simulate a fibrous rheumatism, and affect the sheaths of tendons and muscles. Sometimes, however, they are distinctly nocturnal, and are attended with much tenderness along the course of the long bones; syphilitic nodes, however, rarely appearing.

"Often sore throat does not appear at all; when it does, it is one of the earlier symptoms. It varies in degree from a localized redness and congestion to one of extensive ulceration.

"In every case of infecting chancre, when not treated by specific remedies, that I have been able to trace, some constitutional symptoms (however slight these might have been), have appeared within three months from the date of the primary disease.

"In the great majority of cases the syphilide of the skin makes its appearance after these premonitory symptoms, and without any pyrexia, and, at first, is so trifling in character as to escape the attention of the individual. It ordinarily appears in the form of a dull-red erythema, upon which the squamous and other forms of eruption develop themselves.

"In no diseases of the skin are these affections of so mixed a character as in those caused by the syphilitic virus. Of course cases of unmixed and typical examples of psoriasis, lepra, &c., are common enough, but the majority will partake of more than one affection at the same time and upon the same or different parts of the body.

"This commingling and admixture of eruptions of syphilitic origin is very peculiar, and renders their classification difficult.

"Iritis, under my observation, has appeared more frequently in the papular forms of syphilide than in the squamous or pustular.

"In the majority of instances (happily) no tertiary symptoms appear. After many relapses perhaps of the secondary symptoms, the patient slowly recovers. Of the remaining cases, some have tertiary symptoms, slight in degree; others, these symptoms very severe and difficult of cure. Of course, however, it requires that patients should be for years under observation before we can conclude that no tertiary symptoms have followed.

"I may here remark, that constitutional symptoms appear under two typical limits, which contrast with one another.

"Thus, a cutaneous syphilide, wide in extent and very superficial in character, denotes the milder degree of constitutional infection; while the discrete and localized morbid processes, affecting the deeper tissues of the skin and mucous membrane, have the opposite character of a severe degree of syphilitic infection.[a]

"With a view to prognosis, it is important to inquire:—What relation (if any) has the severity of the primaries to those of the later symptoms?

"From a consideration of my own notes of cases, I should infer that the following would be as approximate expressions to the truth as the facts warrant.

"1st. That the greater the induration, and the longer the period during which primaries remain unhealed, the more certain will be the severity of the constitutional infection.

"2nd. That the amount of ulceration, &c., of the primary sore stands in some relation to the worst and more intractable forms of secondary affections; *e.g.*, the pustular, ecthymatous, rupitic, the unhealthy ulcerations, nodes, and gummatous tumours."

The paper concludes with remarks on the contagiousness of the

[a] "The results obtained from 'confrontation' upon the continent tend to establish the doctrine of the two sores (soft non-infecting, indurated infecting), generating their like; but no observations have been yet made as to whether the severer and milder degrees of syphilitic infection result from different degrees of activity or potency in the virus—*e.g.*, as obtained from different stages of the disease furnishing such virus; or whether these depend upon some constitutional differences in the persons of the recipients of the virus.

constitutional forms of syphilis—on the syphilitic disease of internal organs—on the influence of a warm climate on constitutional syphilis—and on the conveyance of the disease by vaccination.

IX.—*Remarks on Two Cases of Kelis.* By T. Longmore, F.R.C.S., &c.

This interesting account of a rare disease is illustrated by a plate.

X.—*On a Rmearkable Case of Lesion of the Medulla Oblongata, with Remarks, &c.* By A. T. H. Waters.

"*Remarks.*—The interest of the preceding case lies in the fact that the parts of the nervous centres which have been supposed by many physiologists to be the channels through which sensitive impressions are conveyed to the sensorium, were divided on one side, without loss of sensation following. The division of the restiform body was so complete, that it can scarcely be said that any portion of it remained untorn; so that, even admitting that the inferior laceration did not completely divide the continuation of the posterior column of the cord, although it is probable that but few fibres remained intact, the division of the tract higher up was almost, if not entirely, complete.

"The case presents us with a repetition on a healthy man of those experiments, so frequently performed by the physiologist on the lower animals, where the posterior columns of the spinal cord, or the restiform bodies, are divided for the purpose of ascertaining the conditions which result. Had the parts been divided with the knife, they could scarcely have been made to involve the injured portions, without encroaching on other parts, more completely than in this accidental lesion.

"The results of the case are directly opposed to the theory which has been supported by many eminent physiologists, that the posterior columns of the cord and their continuations, the restiform bodies, are the tracts by which sensitive impressions are conveyed from the posterior roots of the spinal nerves to the sensorium; and they tend to confirm in a remarkable manner the views of several recent physiologists that no such function is performed by these parts. Unfortunately, as far as I could see, the case does not give us any clue as to what the function of these nervous tracts is; the results are of a negative character, not the less important, however, as affording a support for theoretical views founded on experimental inquiry on the lower animals and pathological observations on man; and although the case is not of such a nature as to enable us to establish a positive doctrine of the function of the injured parts, it may help to clear up any doubt which may still exist as to their supposed function, and thus assist in the attainment of the truth."

XI.—*A Contribution to the Pathology of the Crura Cerebri.* By Herman Weber, M.D., &c.

This is an exceedingly valuable paper, and we regret that the space at our command does not enable us to give a sufficient analysis of it. The lesion was circumscribed and uncomplicated with any other morbid condition of the brain. It consisted of a clot, occupying a great portion of the internal and inferior part of the left crus, while the external and upper part appeared unaltered. The symptoms were total immunity of the intellectual faculties, with the exception of the first moments after the seizure, when the transitory loss of consciousness was, no doubt, due to the general shock, and not to the local affection—almost total paralysis of the limbs of the opposite side as to motion, and considerable impairment as to sensation—imperfect and less persistent paralysis of the muscles of the trunk, and of the fifth, of the pars dura of the seventh and of the ninth cerebral nerves of the same side; the affection of the pneumogastric nerve manifested itself in the more than usually slow and irregular action of the heart during the first days after the seizure. To the impaired action of the same nerve, Dr. Weber ascribes also the production of, or, at all events, the disposition to, the broncho-pneumonia and pleuritis appearing two months after the hemorrhage—the more so, as the right side was the one principally affected. The participation of the sympathetic nerve was further manifested by the increased temperature of the paralysed side. On the side of the lesion there was paralysis of the third nerve, causing, in addition to strabismus, some interesting phenomena of vision.

Dr. Weber gives references to parallel cases, and in a plate figures the seat and extent of the clot.

XII.—*Description of a Fetus, Born Without Heart, Brain, Lungs, or Liver.* By W. H. Dickinson, M.D.

The author of this paper re-opens the controversy as to the method in which the circulation is carried on in monsters of this class, but without, in any degree, shaking our faith in the views propounded by the late Mr. Houston in the 10th and 24th volumes of the first series of this Journal. The matter is one of more importance than may at first appear—the question being virtually whether there is a capillary or other force capable of carrying on the circulation, or whether the acardiac fetus depends on a force

transmitted through the placenta from the heart of the perfect fetus to which it is a twin. The existence of a motive power of the circulation, independent of the heart's action, we believe to be established beyond a doubt, and we hold that no physician can practise successfully who does not recognize it. Those physiologists, however, who deny this power, assert that in the acardiac fetus the force is derived from the heart of a perfect fetus that is always, they say, attached to the same placenta. Cases have, however, been recorded where there was no second fetus; but, as their authenticity has been questioned, we cannot rely on them; but we cannot accept a theory such as that proposed by the author of this paper, which implies that the impure blood that has returned from the body of the acardiac fetus, is carried, without purification, through the whole course of the circulation of the perfect fetus.

XIII.—*Case of Extreme Deformity of the Neck and Forearm from the Cicatrices of a Burn; Cured by Extension, Excision, and Transplantation of Skin, Adjacent and Remote.* Exhibited by John Wood, F.R.C.S.

The deformity in this case was very great, and was most skilfully relieved chiefly by the transplantation of integument from over the sternum to the neck, and from the surface of the abdomen to the forearm.

XIV.—*Account of a Patient upon whom Ovariotomy was Performed Twice; with Remarks.* By T. Spencer Wells, F.R.C.S.

XV.—*On the Induction of Premature Labour in Cases of Pregnancy, Complicated with Albuminous Urine, Dropsy, and Amaurosis.* By Robert Lee, M.D., F.R.S.

In this paper three cases are mentioned. In the first, a primipara in the sixth month of pregnancy became amaurotic, and consulted Mr. Bowman, who found her suffering from albuminuria in a high degree. Dr. Lee was now consulted, and advised the induction of premature labour; but, before deciding on the operation, Dr. R. Ferguson was called in, and at his suggestion it was postponed, "chiefly on the ground that the life of the child would necessarily be sacrificed, as the pregnancy had not advanced beyond the sixth month." A fortnight afterwards the patient had an attack of convulsions, and labour was then induced, when a dead fetus of *four*

months, in a state of decomposition, was expelled. Is it possible, we would ask, that Dr. Lee and Dr. Ferguson never make use of the stethoscope when deciding on important operations?

XVI.—*Description of a New Iris Forceps.* Invented by W. R. Beaumont, F.R.C.S., Eng.

XVII.—*A Case of Strangulation of the Stomach in an Umbilical Rupture, and of Death During its Reduction under Chloroform.* By Charles H. Moore, F.R.C.S.

XVIII.—*A Case of Transposition of the Great Vessels of the Heart.* By John Cockle, M.D.

XIX.—*A Case of Popliteal Aneurism, Cured by Digital Compression.* By George Southam, F.R.C.S.

We extract a portion of the author's remarks on this case:—

"The reasons which induced me to prefer compression to ligature of the femoral artery in the treatment of this case, are sufficiently obvious, as few enlightened surgeons would in the present day resort to the latter, except under peculiar circumstances, in aneurisms involving the principal vessel of the extremities. But though compression may be regarded as the best plan to adopt, yet the manner of its application is still a subject for discussion.

"Success in several previous cases induced me first to try instrumental pressure. It soon became evident, however, that the vitality of the limb was too much impaired to admit of this treatment. Indeed, the unusual size of the tumour, the unsatisfactory condition of the surrounding parts, as well as of the patient's general health, formed in themselves serious obstacles to any kind of operative interference.

"The iodide of potassium having been recently reported by M. Bouillaud[a] to have cured an aneurism of the carotid, this remedy was administered to the patient for upwards of three weeks; but the sac continuing to increase in size, the pulsation becoming more distinct over its entire surface, and the constitutional symptoms more aggravated, it was thought desirable to discontinue it. Digital pressure was now determined on, which caused consolidation of the swelling in fifty hours, though during the first twenty it was only partially applied.

"The satisfactory result of this simple plan of dealing with such a

[a] "*L'Union Med.*, Tome i., p. 436, 1859. For a *résumé* of all the facts relating to the iodide of potassium in the treatment of aneurism, see a paper by Dr. Roberts, *Brit. Med. Journal*, 1863, Vol. i. p. 83.

formidable disease was doubtless due to the care with which the compression was kept up by the students, all of whom took a deep interest in the case. And in other instances of this disease, where similar assistance can be obtained, I feel persuaded the issue will be equally successful, for all who had seen my patient considered his case very unfavourable for any kind of treatment.

"Many are the advantages of digital over instrumental compression. Not only does it seem to effect a cure in a short space of time, but with much less pain; and is less likely to lead to sloughing of the structures under pressure, which with the greatest precaution is liable to occur in some cases. The flow of blood through the aneurismal sac may probably not be so effectually prevented by this means, and indeed this is not to be desired, as fibrillation of the blood is more likely to occur and to be more permanent, if allowed to pass through the swelling in small quantity, and in a slow continuous stream. For digital pressure is not liable to the sudden alternations in force and volume which under instrumental pressure is apt to take place, in consequence of the tendency of the artery to escape from under the tourniquets on any slight movement of the limb.

"When a sufficient relay of assistants cannot be obtained to complete the cure by finger pressure alone, there need be no objection to the occasional use of instruments, or even, when practicable, to the flexion treatment recommended by Mr. E. Hart.

"The pressure itself may be discontinued for a short time, when it causes severe pain or interferes much with the functions of the surrounding parts; and this I consider a point of considerable importance, showing, as it does, that digital compression is applicable to aneurisms where instrumental is not feasible.

"Already there are on record two cases of aneurism of the ophthalmic artery successfully treated by intermittent digital pressure of the carotid, by Drs. Gioppi and Vanzetti, of Padua. In one, the carotid was compressed for periods of one or two minutes at frequent intervals, and at the end of four days all pulsation in the tumour had ceased. In the other, pressure was applied for five minutes at a time, and the cure was completed in eighteen days.[a]

"It is, therefore, to be expected that iliac and axillary aneurisms will, in some instances, yield to this method of treatment; at least it should be tried in such cases before the patient is exposed to the dangerous operation of ligature."

XX.—*Cases of Icthyosis Spuria Vel Sebacea.* By J. W. Ogle, M.D., F.R.C.P.

This is an account of a rare form of skin disease occurring in two

[a] Holmes' System of Surgery, Vol. iii, pp. 482, 423, 1862.

sisters, due to an increased and unhealthy secretion of the proper sebaceous matter of the follicles, which accumulating, becoming indurated and discoloured by dust admixed, becomes also adherent to, although having no organic connexion with the subjacent surface of the skin. A coloured drawing is given of this affection. The disease, if such it may be called, speedily yielded to the use of a daily warm bath, and a lotion of diluted liquor potassæ.

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1. *Travels in Peru and India while Superintending the Collection of Cinchona Plants and Seeds in South America, and there Introduction into India.* By Clements R. Markham. 1864. 8vo.

2. *Proceedings of Madras Government for* 1861 *and* 1862.

3. *Report on the Expedition to Procure Seeds and Plants of the Cinchona Succirubra, or Red Bark Tree,* by Richard Spruce, Esq., 1861.

4. *Report on the Bark District of Huanuco.* By G. J. Pritchett, Esq.

5. *Notes on the Propagation and Cultivation of the Medicinal Cinchonas.* By W. G. M'Ivor, Esq.

6. *Notes on the Medicinal Cinchona Barks of New Granada.* By H. Karsten. *And on the Cinchona Trees of Huanuco (in Peru).* By E. Poëppig.

The genus *cinchona*, whence the important order of *cinchonaceæ* is named, is thus described in Professor Balfour's *Class Book of Botany*:—

"Cinchona is the *genus* which furnishes the species of Peruvian bark-trees. They contain three important alkalies—quinine, quinidine, and cinchonine, combined with kinic acid and a peculiar variety of tannin. Some of these have a brown, and others have a white epidermis, the former being the most valuable. The most important varieties in English commerce are:—Yellow or Calisaya bark, yielded by *Cinchona calisaya;* crown or Loxa bark, by *Cinchona condaminæa, var. vera;* Cusco bark, by *Cinchona pubesceves, var. palletiviana;* gray or Huanaco bark, by *Cinchona nitida* and *Cinchona*

micrantha; Huamalis or rusty bark, by *Cinchona condaminæa, var. chatmarguera;* fibrous or Carthagena bark, by *Cinchona condaminæa, var. lancifolia;* hard Carthagena bark, by *Cinchona cordifolia;* and red bark, by an undetermined species. Quinine is got chiefly from *Calisaya* bark, cinchonine from *Cusco* and gray bark, and quinidine from several of the inferior kinds, such as the fibrous *Carthagena* bark. The region of South America, inhabited by cinchonas, extends over 29° of latitude, according to Weddell. It represents a narrow riband, which, with its bends, describes a vast curve following the direction of the great Cordillera of the Andes, commencing with the 19th parallel south, and generally coinciding with its eastern slope, where it maintains an elevation varying a little according to latitude, but confined within the limit of 7,000–8,000 feet. The middle of this curve, which is at the same time its most western limit and nearest the coast line, is situated near Loxa, in longitude 82° west of Paris—its lower extremity touches upon longitude 62°, and its upper disappears about 70°. As the bark is becoming scarce, it is of importance to extend the cultivation of the trees. *Cinchona calisaya*, or the yellow bark tree, has been introduced by Royle into India; some specimens were sent from the Edinburgh Botanic Gardens from seeds supplied by Mr. Pentland."

Further on in his notice of the genus, Mr. Balfour puts down the number of known species of *cinchonaceæ* at 2,500, of which the coffee tree (*Coffea arabica*), the ipecacuanha tree (*Cephäelis ipecacuanha*), and the Cape Jasmine, of the genus *Gardenia*, are familiar species. With this remark we will proceed to give an account of the several steps by which, under the direction of certain gentlemen, this all-important result has been accomplished—namely, the introduction of the bark-yielding *cinchonæ* into India, and the successful propagation and cultivation of the plants there.

It will be observed that Mr. Balfour, in the latter part of his notice of the *cinchona genus*, written some time prior to 1855, mentions that the *cinchona Calisaya* had been introduced into India by Dr. Royle. This is not quite accurate, nor is it consistent with the narrative of facts which we have to relate. That no one took a greater and more active interest in the question than Dr. Royle, up to the day of his death, we are ready to affirm. And had Dr. Balfour stated that Dr. Royle had repeatedly pressed upon the attention of the authorities the introduction of the quinine-yielding cinchona into India, the least objection could not have been found

with his notice. But taking the word "introduction" in the only sense in which it can fairly be used in such a matter, Dr. Balfour's statement is incorrect. What Mr. Royle accomplished towards the introduction of the cinchona into India, and towards the naturalization and acclimatization there of the bark-yielding varieties of the *genus*, will hardly justify the amount of credit Dr. Balfour allots to him.

We have the less hesitation in saying this because Dr. Royle's scientific attainments and highly successful career are beyond question, and because Dr. Royle, so far back as 1835, in his work on *Himalayan Botany*, was the first to suggest the introduction of the cinchonas into India, as he was also the first to press upon the East India Company the introduction of the China tea plant into their Himalayan possessions.

It cannot be questioned, however, that in the fullest sense—in which only we have a right to make use of such a term—the "introduction" of the cinchonas into India has only just now been accomplished; and as far as it has gone is entirely owing, in the first instance, to the personal exertions of Mr. Clements R. Markham, and of Mr. Richard Spruce, who, assisted by gardeners Cross and Weir, procured the necessary seeds and plants *for* India; and, in the next instance, to Mr. W. G. M'Ivor's successful system of propagation and cultivation of the seeds and plants *in* India.

Some five-and-twenty years have passed since the idea of introducing and acclimatizing, in the hill ranges of India, the quinine-yielding cinchonas was first entertained and urged upon the notice of Government by Dr. Royle, and afterwards by Lord Bentinck. That the supply of the fever-allaying bark had, for several years, been inadequate to the demand, and that the forests of South America were rapidly disappearing before the axe of the Cascarilleros, were facts well known to professional men and to statesmen at the time. Nevertheless, years elapsed before any serious attempt was made to arrest what threatened to be the early extinction of this, the most valuable of our Materia Medica plants; and it was not until March, 1852, that the then Governor-General of India, Lord Dalhousie, took the matter seriously in hand, and pressed it upon the notice of the Court of Directors. The Court submitted his lordship's despatch to Dr. Royle, and that gentleman drew up a valuable paper on the subject, dated 27th June of the same year. Dr. Royle pointed out that "among the vast variety of medicinal drugs, there is not one, with the single exception of opium, which

is more valuable to man than the quinine-yielding cinchonas." He dwelt upon the value to England of the introduction of these plants into suitable localities in India, and the strong probability of entire success if the matter were taken up in earnest.

The subject, thus vigorously set on foot, was brought before the Board of Control, and an attempt was made to introduce the plants through Her Majesty's Consular Agents in South America. While these measures were being taken, Dr. Royle, in the interests of science and humanity, endeavoured himself, in the same year (1852), to carry out his own suggestion, and with that object sent to Calcutta seeds of the *Cinchona calisaya*, received from Mr. Weddell. But we learn from Dr. Anderson, the Officiating Superintendent of the Botanic Gardens, Calcutta,[a] that "these seeds were sown, but none of them germinated."

In the same year, also at the suggestion of Dr. Royle, plants reared from Mr. Weddell's seed were obtained from the Botanical Gardens of Edinburgh, and were safely conveyed to India by Mr. Fortune, who delivered them to Dr. Falconer, at that time Superintendent of the Calcutta Botanical Gardens. Dr. Falconer, finding the plants dying off in Calcutta, forwarded them to Dr. Campbell, Superintendent of the Government Gardens at Darjeeling. Out of the number forwarded, three only reached him alive; and these, in the Spring of the following year, were reported "killed by the cold of last Winter." As Lord Canning, in his Minute of 20th October, 1856, remarked :—"The plants appear to have received precisely that treatment which would make their growth impossible, having first been subjected to the heat and moisture of Bengal, and then transferred to the cold climate of Darjeeling—without, it would seem, having been placed, at the latter place, under competent care."

Subsequently, seeds and plants were procured and forwarded by Mr. Pentland. The seeds were again sown in the Calcutta Botanical Gardens, but with the same result as before—they did not vegetate. Subsequently, plants were forwarded by Mr. Cope from Ecuador; and, although received in a living state, they likewise ultimately died.

Thus far no measure of success would seem to have rewarded the praiseworthy efforts of any of these gentlemen: nevertheless they

[a] See Letter, from Dr. Anderson, Officiating Superintendent, Royal Botanic Gardens, Calcutta, to W. Grey, Esq., Secretary to Government of India, No. 333, dated 11th February, 1862.

were far from discouraged; again, in 1855, another attempt was made, under the auspices of Drs. Royle, Falconer, and Thomson, and this also ended in failure. In March, 1857, Dr. Royle drew up a full report upon the experiment, and carefully reviewed the means which had hitherto been adopted. He pointed out that all arrangements for obtaining seeds and plants had hitherto been left dependent upon the exertion of agents who might or might not second the proposals of their principals, and pressed upon the notice of Government the absolute necessity of selecting a special agent for the purpose.

It now became apparent to Lord Stanley, Her Majesty's Secretary of State for India, that if success were to be obtained at all in this important undertaking, it could only be secured by enlisting the services of a well-qualified agent to conduct the enterprise in person; and consequently, towards the end of the year 1859, Mr. Clements Markham was engaged for the special duty of procuring seeds and plants for India. As mentioned in the Resolution appointing Mr. Markham, his qualifications for the duty consisted of "a knowledge of the best cinchona districts, acquired during a residence in Peru and Bolivia; a general knowledge of the various species of the cinchona tree; an acquaintance with the Spanish language, and with the Quicha, or language of the Indians of the districts in question, and an intimacy with many of the public men and land-owners on the eastern slopes of the Cordilleras, where the cinchonas abound."

Before alluding to the way in which this gentleman discharged his duties, it may not be amiss to mention here that Mr. Markham's appointment was, on its announcement, severely animadverted upon, on the grounds that he had no special qualification for the duty; and, as far as he was concerned, the failure of the mission was confidently predicted. How far the prophecy has proved true will be seen as we proceed. We have not the pleasure of Mr. Markham's acquaintance, nor have we ever seen him, but we know that highly gratifying success has crowned his and his assistants' labours; and the flourishing in strong health of upwards of 300,000 cinchona plants under Mr. M'Ivor's charge, on the Neilgherry Hills of Southern India, proves that the introduction of the cinchona plant into India has at length been accomplished.

Mr. Markham's first act, after being entrusted with the conduct of the experiment, was to point out, in his letter to the India office, dated 20th July, 1859, that eight or nine of the more valuable

species of cinchona were scattered over a space of more than 1,400 miles along the eastern slopes of the Andes, and that his individual efforts would only enable him to procure one species. If the thing were worth doing at all, he added, it was worth doing well, and accordingly he recommended four separate expeditions into four different localities—into Bolivia, into Peru, into Ecuador, and into New Granada. For the expedition into Ecuador he suggested the employment of Mr. Spruce, and for New Granada he secured the services of Mr. Bollaert, in which, however, he was afterwards disappointed. He himself undertook the expedition into Bolivia, and he selected Mr. Pritchett for the forests of Peru.

These preliminaries having been settled, Mr. Markham wrote out detailed instructions for the guidance of Messrs. Spruce and Pritchett, particularly directing them to collect both plants and seeds, and to send plenty of the latter to the Governors of Trinidad and Jamaica; and having seen everything in train, Mr. Markham himself left London, and arrived at Guayaquil on the 19th of January, 1860, and at Lima on the 26th of the same month. Two practical gardeners, Cross and Weir, were selected to form part of the expedition, and to accompany the cases of plants to India. Weir was associated with Mr. Markham, and Cross with Mr Spruce—and right well have both these gentlemen spoken of the services of their humble fellow-labourers.

We will not follow Mr. Markham through the various difficulties that beset his journey. We must refer our readers to his book of *Travels in Peru and India*, which will well repay a perusal. Suffice it to say that war was raging between Peru and Bolivia at the time Mr. Markham was in the country, from which and other causes he was unable to arrive at Arequipa until the 8th of March. On the 22nd, in company with gardener Weir, he went over snowy heights, 15,500 feet high, to Puno, and from thence to Crucero, the capital of Caravaya, which he reached on the 16th of April. By the 10th of May he had collected 529 cinchona plants in the Caravaya vallies of Sandia and Tamboopata:—

Cinchona calisaya,		*var. vera of Weddell*, . .	237
,,	,,	Morada—*C. boliviana of Weddell*,	183
,,	,,	*Var. b. Josephiana of Weddell*,	75
,,	,,	Verde, ...	2
,,	Ovata,	and *vulgaris of Weddell*, . .	9
,,	,,	*Var. b. rufinervis of Weddell*, .	16
,,	Micrantha—	*C. affinis of Weddell*, . .	7
			529

The state in which he found the plants, the description of soil, and climate in which they grew, are all carefully noted in his Report. For passage across the Cordilleras, his system of dealing with the plants was to place them in rows, and sew them carefully up in Russian matting. He made a hazardous and difficult journey across the mountains, and finally reached Arequipa on the 27th of May, and Port Islay on the 1st June. There the plants were safely placed in Wardian cases, and put on board the steamer bound for Panama.

Mr. Markham intended to return to the forests in July and August for seeds; but from the unsettled state of the country, and the overt opposition he met with, he was compelled to give up his intention. He saw it would be worse than useless to attempt to collect seeds *in person*. He therefore took advantage of his intimacy with some native land-owners and others; and having made arrangements to secure a plentiful supply of seeds through them, he himself set sail for England, and on the 28th July arrived at Southampton.

In August, 1860, Sir Charles Wood expressed his entire satisfaction with the manner "in which Mr. Markham had discharged a duty of great public importance, voluntarily assumed, when the attempts previously made to meet with a duly qualified person to undertake it had proved fruitless."

On the 27th August, Mr. Markham, with the plants, sailed for India. The Madras Government, in the meantime, had been instructed to select sites and to make preparations to meet his wants on arrival. Copies of Mr. Markham's pamphlets and reports had already been furnished to the several Indian governments, for the information and guidance of those who were to take charge of the experiment in India. Before, however, following Mr. Markham into India, we will finish with the labours of his agents and associates in South America.

Mr. Spruce's commission, as we have already stated, was to procure seeds and plants of the "red-bark" tree, and to take whatever steps he considered necessary for that purpose. Previous to his undertaking the commission he had, in 1859, visited the "red-bark" region of Ecuador, on the north-western coast of South America, and had given an account of his proceedings in the *Linnæan Society Journal*. The report of his and Mr. Cross's operations in 1860, written in pamphlet form from Guayaquil, in September, 1861, gives a most interesting account of his Ecuador

expedition. Some idea of the labours he and Mr. Cross had to undergo may be gathered from the following extract, page 10, of his Report:—

"My preparations for entering the forest being completed, I was awaiting the coming of the dry season, when a severe attack of rheumatism so far disabled me that I determined to delegate my commission to Dr. James Taylor of Riobamba. Animated, however, by his assurance that in the warm forest I might expect to recover the use of my limbs, I finally resolved to proceed thither in his company. Not to interrupt the rest of my narrative with the continual groanings of an invalid, I may say here—once for all—that the benefit derived from the milder temperature was almost neutralized by the fogs and damp; and although upheld by a determination to execute to the best of my ability the task I had undertaken, I was but too often in that state of prostration when to lie down quietly and die would have seemed a relief."

Mr. Spruce set out, in company with Dr. Taylor, on the 11th of June, and proceeded to Limon, which he meant to make the centre of his operations. Afterwards, Dr. Taylor went on to Ventanas, where he hoped to have found Mr. Cross, the eminent practical gardener, who, as we have already mentioned, had been sent out from England to assist Mr. Spruce in procuring the bark plants.

Mr. Cross, however, when about to start for Ventanas, was taken suddenly ill at Guayaquil, and did not join Mr. Spruce until the 27th July. In the interim, and until Mr. Cross arrived, Dr. Taylor and Mr. Spruce employed themselves "in visiting the 'bark trees' daily, which extended through a zone of about four miles in breadth; and in collecting and studying the accompanying vegetation." After Mr. Cross's arrival, a pit, with soil, was prepared, and 1,000 cuttings put in, and subjected to various modes of treatment. "But only those who have attempted to do anything in the forest, possessing scarcely any of the necessary appliances, and obliged to supply them, as far as possible, from the forest itself, can have any idea of the difficulties to be surmounted."

Eventually all obstacles were overcome, and their labours were rewarded with success. An interesting account is given of their voyage with the plants, on rafts, to Guayaquil, which they reached at noon of the 27th of December. "The plants, thanks to Mr. Cross's tender care, bore scarcely any traces of the rough treatment they had undergone in their descent from Limon, and in their late voyage from Aguacatal."

At Guayaquil, on the 2nd of January, 1861, Mr. Spruce took leave of Mr. Cross and the plants, having seen them on board a steamer bound for Lima and Panama, from whence, in one of the West India mail packets, they were to find their way to England. Here we shall leave them for the present.

Mr. Pritchett, to whom was entrusted the expedition into the bark districts of Huanaco, left Lima on the 18th of May, 1860, and reached Huanaco, on the eastern slopes of the Andes, on the 28th. On the 9th of June he set out for the forest; and on the 13th reached Casapi, situated at the lower, or eastern, end of a valley of that name. In this valley he found all the trees, with but rare exceptions, had been felled, and "nothing was left to subsequent collectors but to wait till the younger plants should come to their full maturity." He, therefore, abandoned Casapi, and made for Cocheros, which he found to possess advantages over every other place; and here he made his entire collection.

Towards the end of August he carefully packed his seed and his plants, and reached Lima with his cargo without any mishap. At Lima the plants were transferred to Wardian cases, and finally reached Southampton in perfect health.

This concludes that part of the experiment of which the scene lies in South America. We have traced Mr. Markham's return to England, where he left, at Kew Gardens, as a depôt, seventeen young plants in excellent condition, and sailed for India with the remainder. Unfortunately the intense heat in the Red Sea, and for the six days he was delayed at Bombay, completely prostrated the plants, and on opening the cases at Ootacamund, on the 12th October, the roots were found to be decayed.

Still, under the skill and care of Mr. M'Ivor, 207 cuttings were obtained; and for some time many of them promised well, though eventually all except one died.

However disappointing it may have been to Mr. Markham personally to find the few individual plants, which he himself had accompanied to India, decayed and worthless, so many precautions had been taken by him that one solitary disappointment was of little moment to the experiment. It was not, however, the only failure. The plants of *Cinchona micrantha*, collected by Mr. Pritchett, arrived at Bombay on 13th December, and were found, on opening the cases, to be in a hopeless condition. Seeds also of the same species reached Ootacamund on the 13th of January, but were found to have lost their vitality.

In February, 1861, however, the first batch of Mr. Markham's seed arrived at Ootacamund. From these the first seedlings were raised in March, at the end of which month the number of promising seedlings was 172. This may be said to be the commencement of success.

On the 9th April, 1861, Mr. Spruce's plants, 463 in number, all healthy and well, also reached Ootacamund, in charge of Mr. Cross; and the highest credit is due to Mr. Cross for his tender care of the plants during their long sea voyage; he only lost six. Before, however, Mr. Cross's arrival the officious interference of two or three gentlemen in India had well-nigh shipwrecked the whole experiment; and, after a series of reports and counter-reports, all the arrangements made by Messrs. Markham and M'Ivor were reversed, and the failure of the experiment seemed only too probable. The subject dwindled into a silly dispute between two officers, who had no personal knowledge of the cinchona in its native habitat, and whose presumptuous and contradictory assertions must have astonished Mr. Markham not a little.

It is difficult to say to what lengths the controversy might have gone had not Sir William Denison, in the meantime, become Governor of Madras. Fully comprehending the importance of the experiment, Sir William went heart and soul into the question. He saw at a glance that the disputants were little better than empirics, and, if dependence could not be placed upon Mr. Markham, that no one in India could pretend to an opinion of any value upon the subject. The Government order reversing Mr. Markham's arrangements was at once cancelled; and, on Mr. Markham's recommendation, Mr. M'Ivor was solely entrusted with the conduct of the experiment.

From the time that the experiment was placed in the hands of Mr. M'Ivor, to whose attainments in botany and practical horticulture Sir William Hooker, Lindley, and many others, have borne ample testimony, nothing could have gone on more satisfactorily. The experiment, however, had still to undergo another trial, and run the gauntlet of Mr. Anderson's criticisms; and there still remained the best mode of out-door culture to be determined. Both Messrs. Markham and M'Ivor strongly advocated open cultivation; others, and particularly those who had been to Java, maintained that the cinchona should be grown under the shade of forest trees. After actual experiment, Mr. M'Ivor was enabled to report to Government, in June, that of three plants, one of which was planted in an open spot, and two under shade, the one in the open was

growing luxuriantly, while the two in the shade were injured by the drip from the trees. This seemed conclusive. At the same time he reported that, including the plants brought by Mr. Cross, 463 in number, he had upwards of 2,000 plants under his charge. Of his first sowing of seeds only three or four per cent. germinated; of his second sowing from fifteen to twenty-five per cent. germinated; of his third sowing from sixty to ninety per cent. germinated. Thus, judiciously and by careful experiment, had he to feel his way to a success altogether unprecedented.

While these results were being obtained the Governor-General of Netherlands India offered the Government of India a supply of cinchona seeds and plants; and Dr. Anderson, Officiating Superintendent of the Calcutta Botanic Gardens, was sent to receive charge of the seeds and plants, and to convey them to Ootacamund. Dr. Anderson went to Java for the plants, and, on the 17th of December, safely delivered them over in charge to Mr. M'Ivor at Ootacamund. The plants were as follows:—

	Number.
Cinchona calisaya, ...	50
,, pahudiana, ...	284
,, lancifolia, ...	4
	338

The C. pahudiana has since been found to be a worthless species.

As far as the conveyance of the plants from Java to India Mr. Anderson discharged his duties satisfactorily, and we cannot discover in the orders of his Government that he was required to do anything else. The temptation, however, to add to what Dr. Karsten calls the "complicated state of our knowledge of the quina barks" seems to have been too much for Dr. Anderson; and, on his arrival in Calcutta, he accompanied the report of his return with an account of his "investigations in Java and on the Neilgherries, as well as of his study, since 1854, of the subject of the introduction of the species of cinchona into India." Dr. Anderson was a little over a month in Java, and about a week in the Neilgherries. His report is an uninteresting and wearisome disquisition on the geology, meteorology, and botany of Java and Southern India, and contains many errors of fact and inference, which were subsequently exposed by Mr. M'Ivor.

"The Government, however, had not implicit faith in Dr.

Anderson, and Sir William Denison checked any disposition to place undue reliance on his statement, by minuting upon the Report as follows:—

"It appears to me that Dr. Anderson has mistaken the conditions of the experiment now making upon the Neilgherries as to the cultivation of the different species of cinchona. The object has been to ascertain whether, in a climate differing in many respects from that in which the cinchona is found, it may not be possible, by care and attention, to acclimatize the plant, so as to perpetuate and cheapen the supply of a medicine—the importance of which, in a country like India, it is impossible to over-estimate. The Government and its agents are perfectly cognizant of the difference between the climate of the Neilgherries and that of the slopes of the Himalayas; they did not depend upon the brief experience of Dr. Anderson, who, in a residence of about a week on the hills, in the depth of Winter, could hardly be supposed to have acquired sufficient knowledge of the place to have been able to lay down dogmatically either the laws which regulate the weather, or the action of this upon plants raised from seeds or cuttings in the locality itself—but they feel that there are quite sufficient grounds, both in the statement of Mr. Markham, who selected the site, and in those of others who have visited the experimental plantations in Java, to justify a belief that the cinchona, in some of its most valuable species, may be profitably cultivated on the Neilgherries; and they see nothing in the present paper of Dr. Anderson which would induce them to stop the experiment which has been commenced in such a satisfactory manner by Mr. M'Ivor."

Thus ended the last attempt to force upon Government, as facts, opinions and observations which well nigh ruined and certainly retarded the introduction of the cinchona into India.

Since the commencement of the experiment progress reports have been periodically called for by Government, stating the number and condition of the plants in Mr. M'Ivor's charge. Perhaps no better plan of making known the results that have been obtained up to the beginning of the present year can be adopted, than that of giving these Reports in their entirety. We need not go further back than March, 1861. On the 30th of that month the following Report from Mr. M'Ivor shows the number of seeds raised at Ootacamund up to that date:—

Names of Species	Nature of the soil in which sown	Amount of Shade	Amount of Water	Preparation of Seeds before Sowing	No. of days before germination took place	No. which germinated strongly	No. which germinated weakly	Total No. of Seedlings	Remarks
No. 1. Cinchona micrantha, variety—Provinciana.	A mixture of three equal parts—one of burned earth, one of sand, and one of very old cow dung.	Shaded in bright sunshine only.	Watered sparingly at first, and only when the soil was dry on the surface.	Steeped for four hours in oxalic acid.	62	61	16	77	All the seeds were sown in flower-pots, well drained, and the soil boiled, in order to destroy the grubs and larva of insects which would otherwise devour the seeds or young plants as they began to grow. After the soil is boiled it is allowed to dry, then mixed in a dry state, and put into the pots. It is important it should be mixed dry; otherwise it hardens.
No. 2. Do., do.	Do., do.	Do., do.	Watered morning and evening.	Twelve hours in lime.	—	None.	None.	None.	
No. 3. Do., do.	In brown loam, selected by Dr. Macpherson.	Shaded throughout, except in the mornings and evenings.	Do., do.	Steeped for four hours in oxalic acid.	64	None.	1	1	
No. 4. Do., do.	In black loam, selected by Dr. Macpherson.	Do., do.	Do., do.	None.	—	None.	None.	—	
No. 5. Do., do.	A mixture of equal parts of loam, burned earth, and leaf mould.	Shaded in bright sunshine only.	Watered as No. 1.	None.	65	None.	8	8	
Cinchona micrantha, var. Pata de Gallinazo.	Soil prepared as at No. 1.	Do., do.	Do., do.	Steeped as No. 1.	63	18	6	24	
Do., do.	Soil as No. 1.	Do., do.	Do., do.	None.	—	None.	None.	—	
Cinchona nitida,	Soil prepared as at No. 1.	Do., do.	Do., do.	Steeped for four hours in oxalic acid.	66	46	14	60	
Do., do.	Prepared as at No. 4.	Do., do.	Do., do.	None.	68	None.	2	2	
						125	47	172	

"In the treatment of these seeds (Mr. M'Ivor says), they appeared to be impatient of too much shade and moisture, soon becoming mouldy and rotting off. The seeds were sown on the surface, and covered with a thin coating of finely-cut moss. The black and brown loams, as used in Java, seemed to retain too much water, and are certainly unsuited for rearing old seeds. Fresh gathered seeds, possessing great vital power, may grow in loam, but not so freely as they would in soil prepared as at No. 1. The seeds are easily distinguished when they begin to germinate, as they strike their radicles into the ground with great force, considering the small size of the seed. The radicle being established in the ground, the plumule is raised up with the seed on the top of it, where it remains three or four days, then it falls off, and the seed-lobes (cotyledons) expand. I give this description of the process of germination, as I find it is not described in any of the works I possess."

On the 9th of May the number of plants had increased to 1,128, including the 463 which Mr. Cross delivered over to Mr. M'Ivor on the 9th April:—

Cinchona succirubra,	. . . .	507
,,	calisaya, ...	4
,,	nitida, ...	392
,,	micrantha, ...	211
,,	peruviana, ...	14

On the 9th of August the number of plants had increased to 3,536:—

Names	Number	Remarks
Cinchona succirubra, or red bark, . . .	1,517	The imported plants are all in a very promising condition, many of them being in the most luxuriant state of health.
Cinchona calisaya, calisaya bark, . . .	6	The largest of the plants measure 2 feet 6 inches to 2 feet 10 inches high, and some of their leaves measure $7\frac{1}{8}$ inches by $11\frac{1}{8}$ inches.
Cinchona nitida, genuine grey bark, . . .	804	The average growth of the month being $1\frac{3}{4}$ inches.
Cinchona micrantha, var. provinciana, . .	896	The maximum growth made by the most luxuriant shoots being 7 inches.
Cinchona micrantha, var. Pata de Gallinazo, .	42	The first of our seedlings are from 6 to 7 inches high, and from 6 to $8\frac{1}{2}$ inches in diameter across the leaves. The average growth of the month being about $1\frac{1}{2}$ inches, while the maximum monthly growth made by the most vigorous plants is $2\frac{1}{2}$ inches.
Species without name, .	271	
Total, . .	3,536	

On the 31st December the number had increased to 8,603.

On the 30th April, 1862, they had increased to 31,495, as follows:—

Botanical Names	Commercial Names	Number of Plants	Value in the London Market, per lb., of Dry Bark	Remarks
			s. d. s. d.	
1. Cinchona succirubra,	Red bark, . .	14,450	2 6 to 8 9	In fine health.
2. Cinchona calisaya, .	Yellow bark, . .	237	2 10 to 7 0	Do.
3. Cinchona condaminæa, var. uritusinga, .	Original Loxa bark,	1	2 10 to 7 0	Promising.
4. Cinchona condaminæa, var. chahuarguera,	Rusty crown bark, .	8,000	2 10 to 7 0	In good health.
5. Cinchona condaminæa var. crespilla, .	Fine crown bark, .	105	2 10 to 6 0	Do.
6. Cinchona lancifolia, from Java, . .	Crown bark, . .	1	1 8 to 2 10	Unhealthy.
7. Cinchona nitida, .	Genuine grey bark,	2,922	1 8 to 2 9	In fine health.
8. Cinchona species without name, . .	Fine grey bark, .	1,211	1 8 to 2 10	Do.
9. Cinchona micrantha,	Grey bark, . .	3,786	1 8 to 2 9	Do.
10. Cinchona peruviana, .	Finest grey bark, .	357	1 8 to 2 10	Do.
11. Cinchona pahudiana, from Java, . .	Unknown, . .	425	Worthless	Do.
Total number of plants, . .		31,495		

On the 31st August, only four months later, the number of plants had again more than doubled:—

Botanical Names	Commercial Names	No. of Plants on the 31st August, 1862	Value per lb. of dry Bark in the London Market
			s. d. s. d.
1. C. succirubra, . . .	Red bark, . .	30,150	2 6 to 8 9
2. C. calisaya, . . .	Yellow bark, . .	1,050	2 10 to 7 0
3. C. condaminæa, var. uritusinga, ...	Original Loxa bark,	41	2 10 to 7 0
4. C. condaminæa, var. chahayguera, ...	Rusty crown bark,	20,030	2 10 to 7 0
5. C. condaminæa, var. crespilla,	Fine crown bark, .	236	2 10 to 6 0
6. C. lancifolia, . . .	Pitayo bark, . .	1	1 8 to 2 10
7. C. nitida, . . .	Genuine grey bark,	8,500	1 8 to 2 9
8. C. species without name, .	Fine grey bark, .	2,440	1 8 to 2 10
9. C. micrantha, . . .	Grey bark, . .	7,400	1 8 to 2 9
10. C. peruviana, . . .	Finest grey bark, .	2,295	1 8 to 2 10
11. C. pahudiana, . . .	Unknown, . .	425	Worthless
Total number of plants, . .		72,568	

On the 31st March, 1863, the number of plants stood as follows:—

No. of Species	Botanical Names	Commercial Names	No. of Plants
1	C. succirubra, ...	Red bark, . .	51,643
2	C. calisaya, ...	Yellow bark . .	1,540
3	C. officinalis, var. Condaminæa (C. uritusinga Howard), ...	Original Loxa bark,	969
4	Do., var. Bonplandiana (C. chahuaguera,)	Select crown bark,	68,757
5	C. crespilla, ...	Fine crown bark, .	903
6	C. lancifolia, ...	Pitayo bark, . .	1
7	C. nitida, ...	Genuine grey bark,	8,326
8	C. species without name, ...	Fine grey bark, .	2,623
9	C. micrantha, ...	Grey bark, . .	8,424
10	C. peruviana, ...	Finest grey bark, .	2,937
11	C. pahudiana, ...	Unknown, . .	425
	Total number of plants, . . .		146,548

This does not include 2,628 plants which had been distributed to the public

We need not follow these reports any further. The multiplication of plants went steadily on, until, on the 1st of January of this year, the number had reached the enormous figure of 349,226.

State of Cinchona Cultivation, 1st January, 1864.

Plants permanently planted out in the Denison plantation,	66,622
Plants in the nurseries in the open air, ...	138,962
Plants in propagating-house and hardening-pits, . .	72,469
	278,053
No. of cuttings and layers, ...	71,173
	349,226

In an excellent report, by Mr. M'Ivor, dated May, 1862, and in his pamphlet, published by order of Government, and mentioned at the head of this article, every information is given of the mode of propagation and cultivation pursued by him. The difficulties he met with, and the state of the experiment in its several stages are carefully noted. We must, however, refer our readers to the papers themselves. We cannot do more than cursorily allude to them.

The great object kept steadily in view was the multiplication of

the plants as rapidly as possible, and, while pursuing this, the noting minutely and accurately of the various conditions affecting their health and growth. At first propagation was carried on by layers and cuttings; but afterwards it occurred to Mr. M'Ivor to propagate by leaves with the bud attached, and in this he met with complete success.

We have already alluded to the Java system of cultivation under the shade of trees, and the attempt made to force this system upon the Madras Government. We need not refer to the matter again. Open cultivation eventually carried the day as the system approving itself to the minds of Messrs. Markham, Spruce, Howard, Weddell, and all who are authorities on the subject. Even Dr. De Vry—the gentleman in charge of the cinchona experiment in Java, who accompanied Dr. Anderson in his visit to the cinchona plantations of that island—has himself condemned the Java system. He lately paid a visit to the Denison plantations on the Neilgherries, and examined minutely into all the facts, cutting down a tree and analyzing the bark. When he had completed his enquiries he not only came to the conclusion that Mr. M'Ivor's system was the right one, but he went away "with the determination to force its adoption on the Dutch Government; or, in the event of their refusal, to resign his connexion with the undertaking."

The first planting out by Mr. M'Ivor commenced in 1862, in which year sixty acres were cleared and planted, some with and some without shade, at the Dodabetta site, Ootacamund; and at the Neddywattam site 129 acres were more or less prepared, and twenty-one planted out.

To give an idea of the individual growth of each plant, the following table shows two months' growth of eleven plants, planted by Sir William Denison on the 30th of August, 1862:—

No.	Height in Inches when planted, 30th August, 1862	Height in Inches on 31st October, 1862	Growth in Two Months
1	23	31	8
2	16½	28	11½
3	19	25	6
4	15	23	8
5	27	36	9
6	20	28	8
7	21	30	9
8	18	28	10
9	20	26	6
10	20	32	12
11	18	30	12

At the same date (31st October, 1852) the largest plant possessed by Mr. M'Ivor measured six feet nine inches high, with branches from three to five feet in length, and a stem of five inches and three-quarters at a distance of half a foot from the ground.

In April, 1863, specimens of Neilgherry cinchona bark, wood, and dried leaves, were sent to Mr. Howard, the eminent chemist, for analysis. About this time also, or a little earlier, it was discovered by Mr. M'Ivor that the cinchona tree possessed the power of rapidly renewing its bark if the spaces from which the bark is taken are immediately covered with damp moss. A piece of bark renewed in this manner was likewise sent to Mr. Howard.

In May Mr. Howard reported the result of his examination to be very satisfactory; and stated that he found exactly the same constituents in the Neilgherry bark as in the South American red bark.

As the Neilgherry bark upon which Mr. Howard experimentalized was bark of but fifteen months' growth, his favourable analysis may be said to establish the fact that the Madras bark promises to be rich in alkaloids beyond all comparison; for there can be no doubt but that the alkaloids will yearly increase with the growth of the plants; and we should not be surprised if a per centage of seven, or even ten, were eventually obtained.

It is true that this per centage amount has never been reached in South America, even under the most favourable circumstances; but that is no reason why it should not be obtained from plants under a high state of culture, like those in the Denison plantations on the Neilgherries.

Whether, however, our expectation in this respect be realized or not, we can now point to acres upon acres of young trees, and confidently say that thus far has been accomplished, beyond all expectation, the introduction of the quinine-yielding cinchonas into India, and their successful acclimatization there.

The great importance of the experiment, the inestimable value of the plant, and the blessing its successful cultivation will confer upon the whole human race, will best be understood by students of medicine and by dwellers in malarious regions. Throughout the world (with all deference to so great an authority as Dr. Royle, who places opium first) there is no drug *more* esteemed in the art of healing than quinine. When, therefore, we consider the enormous price quinine now sells at in the market, and the probability of the early extinction of the quinine-yielding cinchona tree in South

America, we shall be better able to appreciate the importance of Mr. Markham's labours.

In 1852 the cost to the Government of India of supplying their hospitals with quinine, amounted, annually, to £7,000; and, with the largely-increased European force now in the country, the cost will now be nearly twice that sum per annum.

To the local knowledge, carefully-laid measures, and practical good sense of Mr. Markham, then, as the gentleman to whom was entrusted the entire conduct of the experiment from first to last, the success of the several South American expeditions is mainly due. Whether we consider the hardships he personally encountered, the vigour which he instilled into his associates and agents, or the patience and skill by which he overcame the fears and counteracted the opposition of natives and officials, we can but come to the conclusion that a very great measure of credit is due to him. Mr. Markham, in his published book of travels, modestly assigns the chief credit to Messrs. Spruce and M'Ivor; and no doubt great credit is due to these gentlemen, and especially to the latter; still Mr. Markham must ever remain *dux et princeps* in the great work, which we may now pronounce accomplished, of the introduction of the quinine-yielding cinchonas into India.

Medicines: their Uses and Modes of Administration. By the late J. Moore Neligan, M.D. Sixth Edition. Edited by Rawdon Macnamara, F.R.C.S.I., Professor of Materia Medica to the Royal College of Surgeons, Ireland. Dublin: Fannin & Co. 1864.

Since Europe emerged from the darkness of the middle ages great discoveries in science and arts, and important developments in the constitution of society, have served to distinguish the particular periods in which they occurred. The age of the discovery of printing, the age of railways, and the age of electric-telegraphy mean not only the precise times at which those great triumphs of human intelligence were achieved, but also a period of many years following, and during which they respectively formed a primary subject of popular attention. When the social history of our own time occupies the pen of a future Macaulay, what brilliant discovery

or what peculiar aspect of society will he select as the most fitting to distinguish it? Will he term it the age of industrial exhibitions? or of scientific congresses? or of competitive examinations? Perhaps he may style it the *age of authors*. This, to our mind, would be the most suitable designation, for never since the days of Caxton have there been greater numbers of contemporaneous aspirants for distinction in the wide domains of literature than in this year of grace, 1864.

In the classic days of Swift, Addison, and Goldsmith it was a distinction of no ordinary character to be an author; and few at that time aspired to climb the heights of Parnassus unless they felt themselves animated by at least a spark of the Promethean fire. Most of them might have said, with Virgil:—

> "Me Parnasi deserta per ardua dulcis
> Raptat amor: juvat ire jugis, qua nulla priorum
> Castalium molli devertitur orbita clivo."

In those days it was not only a distinction to be an author—it was a privilege to know one. It was something worth boasting of to have the friendship of even the least celebrated contributor to the *Spectator* or to the *Tattler*. But *tempora mutantur;* authors are now so numerous that the difficulty is, not to have one for a friend, but to have a friend who is not one. The time appears to be rapidly approaching when every one will be his own author. At present the guild of literature embraces so many members that a mere acquaintance with their names, much less with their writings, is too great a tax on the memory of any man, except, perhaps, that of a Mezzofanti. Of course, in a multitude of writers, as well as in a multitude of councillors, there is wisdom; but we venture to say that, in by far the great majority of the literary works of the day, there is little learning and less wisdom evinced—though there is great ambition displayed. The greater number of our authors contribute, no doubt, to the periodicals and to the newspapers; but they would prefer favouring the public with their lucubrations in a separate form—in pamphlet or book—were it not for certain monetary considerations relative to printers and publishers. Very often, however, the small *litterateurs* make, "regardless of expense," an appearance in the form of a small work, with large type, broad margins, and no originality. What would Fielding and Smollett say if they could see the modern *novelettes* of sixty pages of primer? and would not

Boerhaave or Cullen stare at the miniature treatises on materia medica and therapeutics with which the medical press is now flooded? A single, and by no means indispensable, article of the Materia Medica is made a peg upon which to hang a book. We have separate treatises on such comparatively unimportant substances as veratria, vegetable charcoal, and even glycerine, to say nothing of the monographs on iron and its compounds, cod-liver oil, and other really valuable remedial agents. As for the ills which flesh is heir to, every one of them has called at least one author into existence, and some of them have respectively afforded texts for hundreds of volumes. Of these works it may be truthfully said that few of them have been really required, and that the information which they afford is to be found in the larger and systematic works on the sciences directly or indirectly relating to the curative art.

Works, however, occasionally emanate from the press which really supply a want, and in which we vainly seek for the indications of the mere book-maker—broad and comprehensive works, abounding in solid information, and exhibiting the style of an accurate and accomplished writer. A production of this kind we have in the volume which lies before us—the sixth edition of *Medicines: their Uses and Modes of Administration*, originally written by our predecessor in the editorship of this Journal, and now revised and edited, we may safely say re-written, by Professor Macnamara. To pass it by with a simple commendation would be unfair to both the author and our readers. It would be unjust to the author, because he has produced a work of which he may well feel proud, and for which he deserves a high meed of praise; it would be unfair to our readers were we not strongly to solicit their attention to a volume teeming with instruction which cannot fail to prove of the utmost value to very many of them. It is really refreshing to review a work in which one can perceive nothing to abuse. Critics are not always so illnatured as those of that ilk who once invoked the ire of a noble bard. Were there serious defects in the work before us we should feel it our duty to expose them; but we can say, in all candour, that it would be mere hypercriticism were we to find fault with a book of which the excellence is so apparent and the defects are so few and insignificant.

In this country there is no work better known to medical men than Neligan's *Medicines and their Uses*. Imperfect in many respects, as the first edition unquestionably was, it at once became a favourite, and each successive issue added largely to its popularity. No technical

or professional work, however successfully circulated at its first appearance, continues to be largely in demand unless it possess intrinsic merits of a high order. No better evidence of the degree of estimation in which Neligan's *Medicines and their Uses* has always been held could be offered than the fact of five large editions having been exhausted in the space of twenty years. We have so repeatedly noticed this work that we might have felt it unnecessary to do more than make such an announcement, were it not that it is presented to us in a greatly modified form. Before the preparation of this edition was undertaken the author's earthly labours were, alas! brought prematurely to a close, and the task devolved solely upon Dr. Rawdon Macnamara—a gentleman in every way qualified to perform it efficiently, and who, even had Dr. Neligan lived, would, as we are informed, have been entrusted to revise the greater portion of the work. The New National Pharmacopœia, too, has made its appearance since the fifth edition of Neligan's *Medicines and their Uses* was published; so far, therefore, as all the officinal preparations are concerned the present issue may be regarded as a perfectly new work. But this is not all, for we find that the portion of the subject matter of the former editions, which has been retained in the present one, is almost completely re-written—a step rendered desirable, nay necessary, by the recent remarkable advances made in chemistry, botany, and the cognate sciences. Finally, the work is enriched by the description of 150 articles not mentioned in the previous editions, some of which possess great interest. As a specimen of the articles for which Dr. Macnamara is solely responsible we quote that on "Calabar Beans":—

"Physostigma Venenosum. *Calabar Bean. Ordeal Bean of Old Calabar.* The plant which furnishes this seed is a native of Africa, growing in marshy places in the vicinity of Attarpah and Old Town in Calabar; belonging to the Natural family *Leguminosæ*, sub-order *Papilionaceæ*, tribe *Euphaseolæ*. Its title *ordeal* bean it derives from the fact of its being used as a test of innocence or the reverse in the case of parties accused of witchcraft in Calabar; if rejected by vomiting, and the individual recovers, he is adjudged innocent, but if it purges or kills the accused, he is adjudged guilty.

"Botanical characters—A large creeping plant, turning from right to left. Root spreading, with numerous fibrils, and often small succulent tubes attached. Stem two inches in diameter at thickest part, attaining a height of fifty feet; wood of stem porous, containing limpid, astringent, and acrid fluid. Leaves alternate, stipulate, petiolate, pinnately trifoliate. Inflorescence axiliary; flowers about an inch long,

half an inch broad. Calyx campanulate. Corolla papilionaceous, of a pale pink colour, with a purplish tinge. Stamens ten, diadelphous. Pistil more than one and a half inch long; ovary stipitate, rough on the surface; style curved, smooth, except below the stigma, where the concavity is curved with a continuous line of hairs, which give a marked barbate appearance; stigma blunt, covered by a remarkable ventricular sac or hood, which extends along the upper part of the convexity of the style, and from which appearance it derives its present name, derived from *φυσάειν*, to inflate, and *στιγμα*, applied to the upper part of the style. Ovules 2-3. Legume, when full grown, about seven inches long, elliptico-oblong, dehiscent. Seeds 2-3, about an inch long, three-quarters of an inch broad, weighing from forty to fifty grains. Pilum dark, sulcate, extending along the whole convex placental edge of the seed, other edge straight. Cotyledons pale, hypogeal.—BALFOUR.

"CHEMICAL PROPERTIES.—The active principle of the Calabar bean is an alkaloid undoubtedly possessed of most subtle poisonous properties. Dr. Christison has ascertained that it is soluble in alcohol, having obtained from the seeds an extract amounting to about 2·7 per cent. of the quantity operated upon. More recently Messrs. Jobst and Hope have succeeded in insulating the active principle, which, according to their statement, exists only in the cotyledons.

"THERAPEUTICAL EFFECTS.—For the first accurate description of the effects produced by this medicine we are indebted to Professor Christison, who carefully examined into its physiological effects upon rabbits, and subsequently upon his own person. He describes the symptoms following the mastication and swallowing of twelve grains of the seed as being, first, giddiness increasing in intensity, torpor, slight twitching of the pectoral muscles, sluggishness of articulation, great irregularity of the pulse as also of the heart, accompanied with tumultuous action of that organ, great pallor of countenance, extreme prostration, accompanied with marked loss of muscular power, which he attributed rather to a want of an exercise of the powers of volition than to any absolute deficiency in the muscular power; the intellectual functions remained perfectly unaffected. In a wholesale case of poisoning with this bean in Liverpool, the symptoms described present a close resemblance to those placed on record by Dr. Christison, but in addition to those he described, well-marked *contraction* of the pupil of the eye was observed, a symptom which recent observations on the action of this medicine had led the gentleman, in whose charge the cases were, to look for. The only use, so far as I am aware, to which the Calabar bean has been as yet applied is to produce contraction of the pupil. This can be done either by introducing a minute proportion of the alcoholic extract or of a paper prepared for the purpose into the eye, when contraction of the pupil will present itself in a period of time varying from ten to thirty minutes. Mr. Squire has introduced to the notice of the profession two preparations of Calabar, one a paper impregnated with the alcoholic extract, a second composed of gelatine similarly impregnated, and rolled out into sheets; both are

divided into small squares, one of which is generally sufficient to produce the desired effect. For this important addition to our ophthalmic therapeutics we are indebted to Drs. Frazer, Robertson, Wells, &c.

"In poisoning by the Calabar bean, an accident not unlikely to occur from careless keeping, and the blandness of its taste, the treatment should be first emetics, then strong coffee and diffusible stimulants."

We have said that Neligan's *Medicines and their Uses* was always a favourite with the practitioner; it must, however, be allowed that it was never a popular text-book with the student of medicine. It did not enter sufficiently into the chemical *rationale* of the various Pharmacopœia processes, and, consequently, it did not afford the kind of information in relation to medical chemistry which would enable the student to pass his examination in that department of science. In the present edition this drawback is completely obviated. The changes which take place in the preparation of acids, salts, alkaloids, and the other classes of substance mentioned in the Pharmacopœia, are described with a degree of minuteness and accuracy that leaves nothing to be desired. At the same time the student is not made to drink too deeply at the Pierean spring; he is not perplexed by the nomenclature of Laurent or of Gmelin, nor puzzled by the unitary system of notation. He has the generally-received, and not too abstruse, theories relative to ammonia and its compounds explained clearly to him; and, whilst the meaning of the terms ammonium and amidogene is made apparent, in language clear, simple, and concise, his brain is not addled by an attempt to make him comprehend the poly-ammonias, nor is he required to understand why it is that ammonia ought in strictness to be called nitramine. In short the chemistry of this work, though perfectly accurate, is far from being recondite; and we, therefore, predict for it a most favourable reception amongst the students as well as the professors of medicine.

Sophistication of drugs and chemicals is a practice which prevails to a much greater extent than is dreamt of in the philosophy of the purchasers of those commodities. It is on the medicines supplied to hospitals and poor-law boards that the adulterator's art is most extensively and generally practised. The tinctures, ordered to be prepared with proof spirit, are commonly deficient in the requisite amount of alcohol; powdered drugs are seldom free from extraneous and worthless substances; and saline matters, such as the nitrate of silver, have occasionally their weight sensibly augmented by the

addition of cheaper matters. In Neligan's *Medicines and their Uses* all these kinds of adulterations are described, and, with few exceptions, the mode by which they may be detected is pointed out. In the earlier portion of the work the directions given are not so copious as in the latter part: and we notice that no stress is laid upon the frequent deficiency of alcohol in the tinctures, nor is there a ready mode of estimating the amount of that ingredient described; but these are trifling omissions.

The accuracy of the chemical and botanical descriptions of this New Edition is beyond cavil, and tends to place the work on a higher level than some other similar works which have recently emanated from the other side of the Channel. Thus, in a recent work on Materia Medica, it is stated that resins are more soluble in rectified spirit than in absolute alcohol; that gum Arabic is converted by the action of hot sulphuric acid into sugar of milk, and that strychnine enters into the composition of the notorious *Wourali* poisons. We need hardly say that all these assertions are egregiously wrong. Even in the recently issued second edition of a work by a really eminent authority on Materia Medica, the following curious statement is made:—

"Arseniate of soda heated to 300° loses 40·38 per cent. of its weight. A watery solution of 10 grains of this residue, treated with 5·3 measures of the volumetric solution of soda, continues to give a precipitate with the volumetric solution of nitrate of silver until 161·3 measures of the latter have been added, equivalent to 18·5 grains of arsenic acid." We need not point out the error contained in this passage, it is sufficiently obvious; but we may remark that if it were found in the work of an Irish writer the trans-Channel critics would exclaim:—"What an Irish bull! to state that 18·5 grains of arsenic acid are contained in 10 grains of arseniate of soda!" Again, we are told in another book, entitled *The Chemical Processes of the British Pharmacopœia*, that in the preparation of arseniate of iron an equivalent of acetate of soda must be added, in order to form a basic arseniate of iron. Thus:—

$(2\,NaO,\,HO,\,AsO_5)+NaO,\,\overline{A}+3(FeO,\,SO_3)=3(FeO,\,AsO_5)+3(NaO,\,SO_3)+\overline{A}+HO.$

The author believes that the addition of the acetate of soda is necessary to produce the basic arseniate of iron, but such is not the case; it is merely added to prevent the presence of free sulphuric acid, in which the arseniate of iron is soluble, whilst it is unaffected by free acetic acid. From such blemishes as the foregoing Neligan

and Macnamara's *Medicines and their Uses* is free—a fact which testifies to the extreme care with which it has been written and revised.

The plan of this work is singularly comprehensive, and yet extremely simple. Each of its subjects is complete in itself, and yet intimately connected with all the others. Its author does not rest satisfied with merely laying down so many isolated facts, nor with drawing up so many tables showing the constitution and properties of the substances upon which he treats: imbued with the ideas of harmony and unity, he not only supplies information on individual points, but this information has form and colour imparted to it by the relation in which it is placed. The separate items of knowledge are at once valuable in and by themselves, and so joined as to impart to and derive from each other all the advantages of harmonious combination; and we have, as a final result, a symmetric whole which cannot fail to recommend itself to the mind which loves not isolation of things or ideas. This is the highest praise which we can bestow upon this work: *quid plura?*

A Handbook of Uterine Therapeutics. By Edward J. Tilt, M.D., &c. Second Edition. Churchills. 1864. Post 8vo, pp. 318.

This is the second edition of a work of which we did not notice the first in these pages, and that for various reasons, but chiefly because we so disapproved of the introductory chapter that on taking up the book on more occasions than one, we laid it aside unread. In the present edition this chapter has been re-written, the passages that so completely prejudiced us being omitted; and we have now read the book with care and pleasure, and have no hesitation in commending it to our readers as a most valuable compendium of uterine therapeutics—one full of practical suggestions not only for the efficient treatment of uterine diseases but for the adaptation of remedies to the various peculiarities, and even fancies and prejudices, of individual patients.

The work is divided into chapters, each devoted to the consideration of a class of remedies, such as, "Uterine Dietetics," "Antiphlogistic Treatment," "Sedatives," "Caustics," "Emmenagogues," "Uterine Orthopedics"—by this latter term the author means the

rectification of uterine displacements—"Hemostatics," "Tonics," "Treatment of Uterine Complications," "Treatment of Sterility," &c., &c. The several remedies coming under each of these heads are first described, with the best modes of application; then their "range of utility," and under this heading the author's pathological views are briefly expressed; then directions are given for the choice of the several remedies of each class, and cautions as to the evil effects to be guarded against in their use. We have already expressed our opinion as to the "range of utility" of the work, that it is a valuable compendium of uterine therapeutics; but, following the author, we must caution the readers that those who think by its study alone to be able to treat uterine diseases, will fail as completely as the students who trust to the study of a treatise on materia medica for learning the practice of physic.

Outlines of Surgical Diagnosis. By GEORGE H. B. MACLEOD, M.D., F.R.C.S.E., &c. London: John Churchill and Sons. 1864.

WHEN we inform our readers that the writer of this book is the author of *Notes on the Surgery of the War in the Crimea*, their expectations will probably be raised, and they will looked for something beyond the common run of surgical writing. Such was our expectation on taking up this volume, and we feel bound to say that it has been fully realized.

The work is got up in Mr. Churchill's best style, and consists of 543 pp. 8vo. These are divided into—Introduction, pp. 65; the body of the work in the form of a surgical dictionary, and an index, which fully justifies the author in terming it (in the Preface) "a full and copious index."

The introduction treats of the importance of the art of diagnosis, of the difficulties in the way of its acquirement, and of various methods of investigating disease. Suffice it to say that this part of the book forms a complete essay in itself; and though it is of course mainly directed to the surgical side of things, yet physicians who act on the principles there laid down will be much more accurate observers than those who do not. Under head A. (Past History of the Patient) we find everything which ought to be

noted in investigating his or her family history; perhaps the most important matter to medical officers of life assurance societies. Personal history is also treated of with respect to temperaments, age, sex, occupation, habits, moral condition, and residence. Under head B. (Present Condition of Patient) there are what in Lord Bacon's time would have been called "essays" on the information obtained by sight, such as on form, colour, dimensions, relationship, direction, transparence, and movements. On the information obtained by touch, such as on consistence, temperament, movement, specific gravity, dimensions, connexions, and special characters. On information obtained by the ear, such as on auscultation and percussion in surgery. There are also similar "essays" regarding smell and taste, the circulatory, respiratory, nervous, digestive, and genito-urinary systems. All these are complete in themselves, and are followed by remarks on the instruments employed in the investigation of surgical disease. Here the author enumerates the peculiarities of various instruments. For example, under the head "Mouth and Throat," he describes Chassaignac's and Weiss's "speculum oris," as well as the specula oris of Ricord and Charriere. On a subject now attracting the attention of practical men he says, at p. 55:—"Laryngoscopes have been constructed of several patterns, the tendency being always to simplification. The instrument used by my friend Professor Czermak, in which the mirror is attached to the observer's forehead, has always appeared to me the most useful.[a]

"Not only may the larynx throughout its length, but the trachea also, in a great measure, can be inspected by means of this instrument, so soon as the observer and his patient have become accustomed to its employment. In chronic diseases it is invaluable, and in some cases of acute disease it may be employed; but as a rule it cannot be successfully used when the pharynx, and upper part of the larynx, are in an irritable condition. For the investigation of morbid growths, affections of the vocal chords, and ulcerations of the larynx, and also for the examination of the posterior nares, it is invaluable, not only for the *positive*, but frequently for the *negative*, evidence it affords us in investigating obscure cases."

Dr. Macleod describes the "œsophagoscope" introduced by Lewin, of Berlin, and speaks confidently of the value of the

[a] We beg to refer the reader to our review of Professor Czermak's work in Vol. xxxiv. (N. S.), p. 358.

ophthalmoscope. After describing the ear specula of Toynbee, Wilde, Avery, Weiss, Charriere, Harvey, Brunton, and others, he adds:—"It may, however, be remarked, that, as a general rule, expanding instruments are of little use, and that a simple reflecting tube usually fulfils all requirements. By fastening a small piece of wax candle in front of a bright metal spoon, a very convenient and easily-obtained 'speculum auris' may be obtained." Perhaps we might call this "Macleod's speculum," were it not that the gentleman in question would probably decline any association with a spoon.

We just note, in passing, the instruments described under these heads:—Nose; Vagina; Anus; Urethroscopes; Probes; Sounds; Bougies; Catheters; Exploring and Acupuncture Needles. The introduction closes with remarks on the chemical agents used in surgical diagnosis, and the diagnostic value of the effects of remedies.

The style in which this introduction is written we commend to medical writers of the "hazy" school. Dr. Macleod gives words their proper value, and no one can mistake what he says. The arrangement of the treatise proper is such as will, of course, raise many objections. The author candidly states in the preface that he adopted it as the best under the circumstances. We shall endeavour to give the reader some idea of the alphabetical arrangement as connected with the index.

The first word is "ABSCESS (*abscedere*, to separate)—a circumscribed collection of pus (as contra-distinguished from purulent infiltrations.)" He then divides abscesses into, 1, acute, and 2, chronic, and shortly defines each. Under 1 we have the diagnosis of a *superficial* and of a *deep* abscess; also the diagnosis of an acute abscess from local œdema of cellular tissue in the neighbourhood of joints, or on the dorsum of the foot or hand, and from aneurism. We find, also, the diagnosis of chronic abscess, especially from lipoma, cysts and hydated tumours, hernia, soft cancer, aneurism, secretions, accumulated inducts, and protrusions of hollow viscera, containing fluids. Reference is made to "Hernia," "Soft Cancer," "Pelvic Abscess," and to the introductory remarks on fluctuation and pulsation.

Should the enquirer not find what he wants under "Abscess," he can then turn to that word in the index, and he will see references, *seriatim*, to outlines of diagnosis of abscesses in all parts of the body. Thus, *e.g.*, Abscess—"in shoulder-joint, 358."

These references, as the reader will judge, are to the word

"Joints," and thus the subject is presented in a double aspect; *i.e.*, as seen in a systematic treatise on diseases of the joints, and as seen in a monograph on abscesses. We could easily multiply quotations in illustration of the plan now under review, but what we have given is sufficient to show it. Any one who tries it will discover *a refreshingly* easy way of getting clear and concise information on a knotty point of practice, without wading through chapters of small type and double columns; and perhaps failing to catch the very thing wanted. The reduction of the mass of information before us to this form must have cost Dr. Macleod an untold amount of time and labour.

We beg to direct the reader's attention particularly to the following articles, as good types of the entire work:—Adenitis; Aneurism; Antrum; Arthritis; Balls (Musket); Bladder; Brain; Chancre; Dislocation; Fracture; Glanders and Farcy; Gunshot Wounds; Hernia; Mamma; Ovarian Dropsy; Scrotum; Spinal Cord; Syphilis; Testicle; Tumours; and Ulcers.

We shall transcribe one short article, and so let it describe itself:—

"Gunshot Wounds, Apertures of.—The distinction between the wounds of entrance and exit is not always attainable, even in favourable circumstances. It is before inflammation, with its swelling and effusion, sets in, that the following characters will be most easily recognized; yet the shape of the projectile, and the speed of its flight in passing through the tissues, will cause these features to vary considerably. The establishment of inflammation will, in many cases, efface the marks of distinction; and if the ball is fired near at hand, and pass with great force and speed through the part, there may be no appreciable difference. In some cases the usual features may be even reversed. The greater the speed, "ceteris paribus," the less the difference. Further, putrefaction obliterates the distinctions below noted.

"It is in the case of round balls passing at moderate or low speed that the characters distinctive of the wounds of entrance and exit become appreciable.

"*Entrance Wound.*	"*Exit Wound.*
"1.—*Size.*	
"Same as or smaller than the ball.	"Larger than the ball.
"2.—*Shape.*	
"Regular, round or oval (triangular if ball conical.)	"Irregular, flap-like tearing.

"*Entrance Wound.*	"*Exit Wound.*
"3.—*Lips.*	
"Inverted more or less.	"Everted more or less, and protrusion of subcutaneous fat or shreds of tissue.
"4.—*Surrounding Parts.*	
"Considerably discoloured (sometimes by powder); may be dark, or even livid. From conical balls in full flight there is, however, seldom much contusion.	"Little discoloured and bruised.
"5.—*Loss of Substance.*	
"Part of the skin removed, and carried into the wound.	"None in the first instance.

"If the ball has been flattened against a bone within the body before escaping, it may give to the exit wound much irregularity; and if the ball carry in a foreign body with it, the entrance wound may be much larger than usual, and variously shaped. The splitting of a ball within the body and its escape in portions will further vary the relative characters of the apertures. Occasionally an examination of the clothes will enable us to recognise some of the features of the two wounds above described, when they have been effaced from the tissues. The cicatrix of the wound of entrance, from there having been a loss of substance, is well marked, white and depressed, and often adherent; while that of exit is small, frequently a mere irregular non-adherent spot, if there has been no more destruction than that caused by the ball itself."

Though the preceding specimen is selected for its brevity, yet it will not diminish the interest of the reader if he recollects that Dr. Macleod must be looked on as a specialist in the matter of gunshot wounds, by reason of his very extended experience during the Crimean war.

The author is very plain and concise on the diagnostic importance of the double impulse in aneurism; indeed, his definition of the disease is so "ready, cut and dry," that we subjoin it:—

"*Aneurism* (ἀνευρευω, I dilate or open), a tumour containing blood in connection with an artery.

"Distinguished into (*a*) 'spontaneous' and 'traumatic,' according to whether it has resulted from a wound or not; (*b*) 'true' and 'false,' according to whether there be a containing sac, formed of the coats of the vessel. 'Arterio-venous' aneurisms are formed, as their designation implies, partly by an artery and partly by a vein."

We wish particularly to notice the article "BRAIN," in which, and in many others—*e.g.*, "DISLOCATION" and "FRACTURE"—the symptoms of two affections which might be confounded are set down in parallel columns. We now refer to the diagnosis between compression and concussion.

Thus, the temperature in compression is said to be "natural or increased," as opposed to that in concussion, which is defined as "lowered (collapse)." Again, the respiration in compression is "slow, deep, frequently stertorous and blowing," as opposed to that in concussion where it is "feeble, sighing (rarely stertorous)." In like manner we find the mode of establishing the diagnosis between the "'simple,' 'non-infecting' chancre, the 'chancroid' of Clerc, 'chancre mou,' and 'the infecting,' 'indurated,' 'Hunterian' chancre." The diagnosis of certain dislocations from certain fractures is laid down with a full clearness not often met with; indeed, after reading them over, one is led to wonder how a person *could* mistake anything of this kind. Dr. Macleod has figuratively broken every bone and dislocated every joint in the body, and no one need look for any more information in the diagnosis of fractures and dislocations than he can find in this book; while the amateur in skin diseases will find a complete monograph on the diagnosis of the syphilides in the *multum in parvo* headed "SYPHILIS, CONSTITUTIONAL."

Perhaps the best—if there be a best—article in this book is that on "TUMOURS." After some twenty-two pages of diagnostic matter, which it were futile in us to attempt to describe, the essay in question concludes thus:—

"In conclusion, then, it may be observed, that innocent and malignant tumours may grow in many organs and tissues; but that certain tumours affect certain parts more than others, and it may be useful, as a step towards their recognition, to epitomise in a general way the different growths which are most apt to appear in the various regions and organs.

"*Scalp.*—Non-congenital cutaneous cysts.

"*Orbit.*—Serous, sanguineous, and cutaneous cysts; medullary cancer.

"*Antrum.*—Cysts, fibrous, recurrent; fibroid, cartilaginous, osseous, fatty, fibro-cellular, myeloid, erectile, encephaloid tumours.

"*Gums.*—Serous and sanguineous cysts; myeloid, fibrous, and cancerous tumours.

"*Lip.*—Serous, sanguineous, and proliferous cysts; epithelial cancer.

"*Tongue.*—Mucous, serous, sanguineous, and cutaneous cysts; erectile, fatty, fibrous, fibro-cellular; medullary and epithelial tumours.

"*Jaws.*—Cutaneous and dentigerous cysts; fibrous and myeloid tumours.

"*Neck.*—Serous and sanguineous cysts.

"*Lymphatic Glands.*—Cancer in all its forms.

"*Parotid.*—Serous and sanguineous cysts; cartilaginous, fibrous tumours, and medullary cancer.

"*Thyroid Gland.*—Serous, sanguineous, colloid, and proliferous cysts; myeloid and glandular tumours.

"*Skin.*—Fibro-cellular out-growths, epithelial disease, and scirrhus.

"*Sub-cutaneous Tissues.*—Serous, sanguineous, and proliferous cysts; fibro-cellular, fatty, fibrous, cartilaginous, myeloid, and vascular tumours; medullary and osteoid cancers.

"*Inter-muscular Spaces.*—Proliferous cysts, fibro-cellular tumours, medullary cancer.

"*Mamma.*—Serous, sanguineous, oily, colloid, and proliferous cysts; cartilaginous (rare), myeloid, glandular, and fibrous tumours; hard, soft, epithelial, and colloid cancer.

"*Labia.*—Cysts and epithelial cancer.

"*Testicle.*—Serous, sanguineous, seminal, and cutaneous cysts; fibro-cellular tumours and medullary cancer.

"*Prostate.*—Proliferous cysts, scirrhus, and medullary cancer.

"*Scrotum.*—Fibro-cellular tumours, epithelial disease.

"*Spermatic Cord.*—Sanguineous and seminal cysts, and soft cancer.

"*Uterus.*—Fibrous and myeloid tumours, and medullary and colloid cancers.

"*Ovaries.*—Serous, sanguineous, cutaneous, proliferous, and dentigerous cysts; scirrhus and soft cancer.

"*Bone.*—Serous and sanguineous cysts; fibrous, cartilaginous, myeloid, and osseous tumours; scirrhus, medullary, and osteoid cancer.

"*Muscle.*—Various cysts, scirrhus.

"*Nerve.*—Cysts, fibrous tumours, soft cancer.

"*Mucous Membranes.*—Mucous cysts, epithelial disease.

"*Rectum.*—Fibrous, fibro-cellular, and fatty tumours; and scirrhus, medullary, and epithelial cancers."

We have now endeavoured to give a general idea of Dr. Macleod's book, of which, from the nature of its arrangement, a more or less complete analysis is impossible, at least within the restricted limits of a review. Were unlimited space allowed us our difficulty would be, not what to insert, but what to omit. In plain terms, then, we congratulate Dr. Macleod and our profession on the appearance of this book; and we confidently predict for it a place among our surgical classics; for the well-read student, the surgical teacher, and

the busy practitioner, will soon learn so to use as not to disuse it. We have not criticized theories and points of practice, because it mainly deals with the *facts* of diagnosis; and while it contains what is true, whether new or old, it does not steal the results of other men's toil, but shows how one, who has been an "earnest student," as well as a practitioner in and teacher of surgery for several years, can set before his profession an original book.

1.—*A Treatise on Fever, being Part of a Course of Lectures on the Theory and Practice of Medicine.* Second Edition. By R. D. Lyons, K.C.C., M.B., F. and C. K.Q.C.P.I., &c. London: Longmans. 1864.

2.—*A Handbook of Hospital Practice, or an Introduction to the Study of Medicine at the Bedside.* Second Edition. By the same Author.

These are second editions of books already well known to the profession, and have been brought out in a low-priced form so as to place them within the reach of all students. The *Treatise on Fever* was noticed in these pages at considerable length, and in very favourable terms, on the appearance of the first edition. The *Handbook of Hospital Practice* is equally worthy of commendation. Its mission is an important one—to teach students how to study medicine at the bed-side. It is well fitted for its purpose, and most heartily we wish it good speed.

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1. *The Royal London Ophthalmic Hospital Reports and Journal of Ophthalmic Medicine and Surgery.* Edited by J. C. Wordsworth, J. W. Hulke, and J. Hutchinson. Vol. IV. Part II. London. 1864. John Churchill.

2. *The Ophthalmic Review, a Quarterly Journal of Ophthalmic Surgery and Science.* Edited by J. Zachariah Laurence and Thomas Windsor. No. 1, April, and No. 2, July, 1864. London: Robert Hardwicke.

3. *Journal of British Ophthalmology, and Quarterly Report of Ophthalmic Medicine and Surgery.* Edited by JABEZ HOGG. London: John Churchill and Sons. No. 1, October, 1864.

4. *Glaucoma and its Cure by Iridectomy; being Four Lectures delivered at the Middlesex Hospital.* By J. SOELBERG WELLS. London: John Churchill and Sons. 1864.

5. *Vorlesungen über den Gebrauch des Augenspiegels.* Von Dr. C. SCHWEIGGER. Mit 21 Holzschnitten und 3 Tafeln. Abbildungen. Berlin. 1864.

6. *The Ophthalmoscope, its Varieties and its Use.* Translated from the German of Dr. ZANDER by R. B. CARTER, F.R.C.S.Eng., with Notes and Additions by the Translator. London: R. Hardwicke. 1864.

IN bringing before the reader's notice some of the more recent contributions to ophthalmic literature we would direct their special attention to the sudden appearance of no less than two new quarterly journals, devoted to ophthalmic medicine and surgery.

At a meeting of the Medical Council of the Royal London Ophthalmic Hospital (better known as the Moorfields Hospital), in August, 1857, it was determined to issue a periodical record of ophthalmic observation and experience, which should contain practical papers, monthly reports, &c., but which should not contain reviews, correspondence, or anonymous publications. It will be seen in the sequel that these exceptions were made not without reason. The Reports were at first published quarterly, and then at more uncertain periods, and at last it was generally believed that their publication had come to an end; indeed, if we remember rightly, an announcement somewhat to this effect appeared in the *Annales d'Oculistique.* However, the publication of this valuable journal had not ceased, it was only suspended, and in 1863 it again made its appearance, edited as above, the numbers to make their appearance from time to time, as suitable materials may accumulate, and each number te be sold at the lowest price, which (in addition to the fees of the surgeons that are devoted to the support of the journal) will cover the expense of publication. The latest number is first on our list for notice. It contains, among other original contributions, W. Bowman "On Needle Operations in Cases of

Detached Retina," G. Critchett "On a Case of Congenital Cataract Treated by Iridesis," in which some modifications were introduced into the operation; J. W. Hulke, "A Tabular Review of 106 Cases of Squint treated by Operation;" ninety-nine were cases of convergent squint. The casual relation of hypermetropia and convergent squint, discovered by Donders, is strongly confirmed by the figures in the refraction column, where H.m. appears forty-three times, a frequency more than sufficient to show the existence of a very intimate connexion between it and this form of squint; moreover, had it been noted in the earlier cases (fifty-three in number) the total frequency would have reached about ninety per cent. This table of Mr. Hulke's is a most important one, and we hope this subject will receive the attention it deserves. J. Hutchinson, "Cases Illustrating the Connexion of the Fifth Nerve with the Nutrition of the Eye-ball." The translations in this number are all from the *Archiv für Ophthalmologie*, executed by Mr. Soelberg Wells, and are eminently practical; indeed, our best thanks are due to the translator (who is not destitute of some original ideas) for giving us in English Von Gräfe's Memoirs on "Compressive Bandages," and on "Perforation of the Detached Retina," and "Division of Membranous Opacities in the Vitreous Humour."

Whether, from the irregular appearance of these Hospital Reports, or from the fact that they never reviewed or criticised recent writings, we know not; but it soon became apparent that there was room for an ophthalmic journal, to appear at stated periods, which should take the place in the country of the well-known and widely-appreciated *Annales d'Oculistique*, and so, in April last, was published the work that appears second on our list, under the editorship of Mr. Z. Laurence and Mr. Windsor. We confess our sympathies go very much with this journal, which is, we believe, but supplemental to the Ophthalmic Hospital Reports. There certainly need be no spirit of rivalry between them. The papers in the first number are Professor Zehender on the Form of Cataract Knives; Mr. Windsor, Iridectomy as a Method of Forming an Artificial Pupil; Von Gräfe on the Calabar Bean; Dr. A. Mooren on Retinitis Pigmentosa; R. C. Moon, Cases of Paralysis of Accommodation treated by the Calabar Bean; Retrospect of British and Foreign Medical Journals, so far as they relate to Ophthalmic Surgery. This retrospect is of the utmost value; we venture to assert that it is one of the most important contributions to the review, and we trust it will be on no account discontinued.

The author appears to us to pay just as much attention to the contributions of British as of Continental contributors, although for these latter he has to search through a much more extensive literature. Reviews of English Ophthalmic literature. The notices of the works of Rainey, Hulke, and Hogg, are, perhaps, more ciriticisms than reviews. Little mercy is shown when mistakes or blunders are detected; but, with all, we cannot but recognize the fact that these notices, even that on Mr. Hogg's book, caustic though it be, were written by a scholar and a gentleman. A notice of Liebrich's Ophthalmoscopic Atlas concludes this number. That for July contains four original articles:—Dr. Roseburgh, of Canada, on a New Ophthalmoscope for Photographing the Fundus Oculi; J. Z. Laurence on Some Ophthalmic Instruments, with Figures of the New Instruments, the first of which is a strabismometer; this is a very useful and cheap instrument, of which Dr. Liebreich writes that it is both convenient and efficient; a coreometer for measuring the pupil; an instrument for measuring the axis of astigmatism; and lastly, a meniscus ophthalmoscope. Von Gräfe, A Clinical Lecture on Exophthalmus; Mr. Windsor, Notes on the terms Sclera and Sclerotica; while we have no doubt that the more ancient, and perhaps more correct form, is sclera; still, we fear it will requre some time to introduce this word into our British schools. Although much used in Germany, it is a word hardly known in Great Britain. Retrospect and Reviews.

The Journal of British Ophthalmology, we are told in the preface, is published for a special purpose, viz., "to be a *fair and impartial* exponent of the views and practice of English ophthalmic surgeons," because, up to the date of its publication, there was "no truly national organ of discussion in which native worth is allowed *fairly* to compete with foreign genius and pretensions." We confess, that as far as medicine and surgery are concerned, we are not nationalists; indeed, we might go further, and assert that any tendencies in this direction ought to be suppressed, as being both dangerous and improper. Surely, if the physician or surgeon of any nation makes any important discoveries, we of another nation, are not to stand aloof, glorifying ourselves, instead of making use of all modern improvements that may benefit our patients. If there be native worth amongst us, it is certain to succeed, no matter what competition it encounters with foreign genius. But there is another way to view this matter, and it is this:—If this new journal is to be the exponent of the views and practice of a section of the British

school; though even this we consider mischievous, as tending to to promote illiberality; and if it did nothing else, it would do comparatively little injury; but from this first number we fear that while seeking to be the exponent of a native school, it proposes in addition to be the antagonist of all others; that while it will give prominence to and extended notices of the additions constantly being made in this special department of the profession, among some of our own countrymen, it will cry down and use harsh language to those who wish to introduce to us the ideas or the practice of the many distinguished strangers who are spending their lives in advancing ophthalmic surgery, and that it will make a butt of those who, as pupils of these illustrious men, strive to extend somewhat their master's fame.

We proceed to notice the contents of the first number of this new journal, and without indulging in any controversy, will show our reasons for making the foregoing remarks. The first article is headed "British *v.* German Ophthalmologists—Iridectomy and Section of the Ciliary Muscle." We have gone to the trouble of reading this article twice through, and we believe that it would have been infinitely more creditable to the journal if its editor had written a juster, more truthful, and less jealous introductory preface. Few persons are alluded to in it by name; but the allusions are perfectly transparent, and the burden of the whole song is:—"It offends our national susceptibilities to suppose that while clouds of darkness rest upon British ophthalmology a bright and guiding sun makes day over all the rest of Europe." Such remarks we would style childish, were it not for their mischievousness. It is in the very nature of things that a prophet should have honour, save in his own country and among his own kin; and if it offends the conductors of this journal of British Ophthalmology to hear the names of Gräfe, Donders, Arlt, and many others, extolled in London, we can only remind them that it certainly does not offend the editors of the *Archiv für Ophthalmologie* or the *Annales d'Oculistique* to hear in Berlin or Brussels the well merited praises of the venerated Mackenzie, of Bowman, Critchett, Haynes-Walton, and many others. Why, indeed, should it not be so; and why should it be sought to divide public opinion into two cliques in this country. One set who refuse to believe that any good thing can come out of Germany, and another who believe there is very much of what is excellent to be found in Germany as well as in this country; if such a division must take place, we will

enrol ourselves at once in this latter division. We now proceed to give one or two extracts from this notice, so that our readers may judge of the very questionable taste of the whole article. The italics are our own:—

"It appears, when a man of mark determines no longer to labour in the field of original research, he cunningly provides for the void in scientific intelligence the absence of his communications cannot fail to create. He discovers in some recent theory or new operation promulgated abroad—generally in Germany—the long-sought-for desideratum or certain cure for those particular diseases, to the study of which he has specially devoted himself. Ample opportunities of experiment and illustration being afforded in the *perverted practice of his own hospital*, forthwith a series of successful cases, accompanied with laudatory notices of the *great original source of inspiration and information*, for some time burden the pages of the periodical press. At length, with the greatest apparent candour, with no little expressed zeal for the public welfare, and, (were it not proved to be most profitable), with an amount of self-sacrifice otherwise unimaginable, *the astute schemer* frequently succeeds in imposing upon professional opinion at home, some obscure Continental professor as the greatest living authority upon the subject referred to. In this manner several very useful objects are secured by one cast of the net. For instance, no more studious thought or scientific drudgery is required. Where opinion is thus surrendered to another's inspiration, every 'shining hour' may be sedulously improved in taking fees. By selecting also a distant, transmarine authority, the complimented and approved master is a long way beyond competition in private practice. Another part of the system pursued is to select a *convenient professional friend* in important cases, among the wealthy classes, without the necessity of calling or meeting in consultation *some obnoxious neighbour*, who, of one's own knowledge, is possessed of unquestionable tact and ability. Nor is there any substantial loss of previous personal reputation incurred by this ostentatious worship of foreign genius, for beyond a contracted scientific circle the merits of the questions involved are little discussed, and to the general public the obtruded name is, of course, a mere tub to a whale, diverting attention from native talent and national character, which is the real sacrifice intended to be made on the altar of selfishness.

"Another result of this vicious system of invoking assistance from the Continent to supply poor England's alleged want of knowledge, has been to create a number of *little cliques of second and third rate men*, each swearing by the standard which caprice or opportunity has led them to select and set up from among the heaven-born geniuses, whom it is all at once discovered, the present age has been so prolific in producing

everywhere else but at home. Almost every Ophthalmic Hospital in London has its representative hero-worshipper of operations and instruments drawn from that teeming land of mesmeric dreamers—Germany. Each institution has also a *staff of clinical assistants waiting to carry out their seniors*, and after burying them decently, weeping, of course, over their graves, hoping to step into their carriages, on the strength of having sat long and patiently at the feet of the well-known popular practitioners. These young men are generally selected in the first place with a most careful regard for future contingencies. Self-reliant genius never has a chance, and any striking ability is an obvious disqualification. To be *respectably connected*, however, is very necessary, and to possess the plodding industrious habits of the model student without any recommendation of mind is another earnest of success. Docility and devotion to their chief are also, indispensable qualities, which always ensure his friendship, and no inconsiderable amount of the crumbs that fall from his overladen table."

We would ask, what greater benefit can be bestowed upon the general practitioner than by translating the more important memoirs of continental writers into English? and we would then inquire if the following sneer is just or amiable:—

"The field of home produce being thus effectually discouraged, second or third-rate men, without an original idea, find in translating the works of foreign writers, just the opportunity they most desire of advertizing the public that they have really perpetrated a printed book, and have an account with a publisher. Of course, they are far from being displeased with a state of things which affords them an opportunity so flattering to their conceit and gratitude to the master mind, to whose artful policy the situation is due finds expression in a continual reference of doubts to his decisive *dictum;* which, materially strengthening his position in the opinion of the outside world, thereby makes more formidable any opposition he may offer to the general recognition of newly-discovered truth. Moreover, for their own protection, the third-rate pretenders to knowledge, whose claims for credit and distinction as ophthalmic surgeons chiefly rest upon translations of foreign books upon the subject, labour most assiduously in extending a popular belief in the total absence of any trustworthy English professional authority, while it seems impossible for them to say too much in exaggerated praise of Continental writers; many of whom, we suspect, must be very much surprised, and quite unable, themselves, to account for the proud position they have thus so easily achieved in the reputed head quarters of civilization and science."

The writer next demurs to a statement[a] of Mr. Windsor's, "That German ophthalmology has especially distinguished itself of late by the attention it has paid to the anatomy and physiology of the organ of vision, &c. Hence the English reader, who is necessarily more or less unacquainted with these recent discoveries, must expect to meet with many and great difficulties." Now, while the German writers would be the last in the world to pass over the labours of such men as Jacob or Bowman, Young and Airy, yet it would be very wrong for us not to acknowledge that the Germans have been very far before us of late years in all that concerns the anatomy and physiology of the eye.

Into the iridectomy question we will not enter; whether Graefe's or Hancock's operation will be "ultimately the settled universal practice," we will not venture to decide; personally, we have as little doubt on the matter as the writer; and in spite of the dire allusions to the quotation in page 13, we would sum up the subject by the following quotation from one whom even the writer of this introductory notice to this new journal calls "gifted!"[b] and assert that "humanity urgently requires that prejudice and ignorance should no longer oppose the use of iridectomy or glaucoma."

The original contributions in this number are:—J. Nottingham—Cancer of the Eye-ball; H. Hancock—Strumous Ophthalmia of Children; this is an interesting paper, and will well repay perusal; it is to be completed in the next number: Henry Wilson—Vascular Tumour of Cornea, with woodcuts: Dr. Graseman—A case of Cataract: Dr. Garstang—A Case of Staphyloma Cornea: Spencer Watson—On the Physiognomical Aspect of Certain Diseases of the Eye: Jabez Hogg—On the Value of Belladonna in the Treatment of Iritis: Reports of the Norfolk and Norwich and of the Royal Westminster Ophthalmic Hospitals: Reviews—Jago on Entoptics, and Donders on Accommodation: Retrospective Ophthalmological Literature: Answers to Correspondents. We are surprised to find these answers to correspondents made the medium of some very disgraceful attacks on professional men; so disgraceful that we were astonished to find such in a work with the Messrs. Churchills' name on the

[a] Introductory Notes to Graefe's Memoir on Iridectomy, New Sydenham Society. 1859.

[b] Donders on the Accommodation and Refraction of the Eye. Translated by W. D. Moore, M.D. New Sydenham Society. 1864.

cover as its publishers. Mr. Laurence is styled throughout one of these answers as "Zachariah." Some story (we know not its merits) that took place in 1857 is most conspicuously brought forward, and it goes on:—"We take this opportunity of saying that in our case it appears *he hired a Mr. R. B. Carter*, of Stroud, to pen the ungentlemanlike note" (we presume this is an allusion to some review). "*Of this person* (Carter) we merely wish to remark, for the information of our readers, that he looks upon himself as 'the coming man,'" &c., &c. And, again, in answer to a Mr. Johnston we read:—"We have not seen the book; but have been told it is a mere puffing translation of a tradesman's illustrated catalogue of German ophthalmoscopes." How unfair all this is, will be seen towards the close of this notice; how wrong this nasty low style of writing is, we leave it to our readers to determine. We have been thus particular in calling their attention to this journal because we feel sure that if it be conducted in the manner we have noticed it will be anything but creditable to the profession.

The four lectures on glaucoma, and its cure by iridectomy, were delivered at the Middlesex Hospital by Mr. J. Soelberg Wells. We would recommend these lectures strongly to any medical practitioner or senior student, who wishes to be able to recognise the symptoms which this disease may exhibit in its different forms and stages; he will find in them the prognosis which may be given as to the beneficial effects of iridectomy, and very simple and well illustrated directions as to how to perform the operation. Those who wish for more detailed information must consult Haffman's paper on glaucoma in the *Archiv für Ophthalmologie*, Band VIII., Abth. 2; or Gräfe and Bowman's memoirs. But these four lectures will serve all practical purposes, and we would advise all medical students to make themselves acquainted with their contents.

Dr. C. Schweigger's lectures on the use of the Ophthalmoscope are based on an extensive series of observations made while one of the assistants of Von Gräfe's eye clinique; so that, although there is a good deal in them that every ophthalmic student will be at once familiar with, yet even the most elementary facts are conveyed in a pleasant and agreeable way, and many of the observations are both original and instructive. The lectures are nine in number:—1. Optical Introduction; 2. Aut-ophthalmoscopy; 3. Examination with the Ophthalmoscope; 4. Examination of the Refracting Media; 5. Diagnosis of the Anomalies of Refraction; 6. Examination of the Fundus Oculi; 7. Alterations in the Choroid; 8.

Alterations in the Retina; and, 9. Alterations in the Optic Nerve. These lectures are illustrated by twenty-one woodcuts and three lithographs.

For those who are not very familiar with the German the last book on our list will be most acceptable. Zander's *Ophthalmoscope, its Varieties and Use*, is one of the very best works on the subject; indeed, no better work could have been selected by the energetic publisher of this volume to introduce to the English reader, and few men in this country were more capable of translating and editing it than Mr. Carter.

With this volume and Liebreich's *Atlas* the practitioner will not require any other work to give him a correct idea of the varieties of the ophthalmoscope, of its uses, and of the ophthalmoscopic appearances of healthy and diseased eyes; almost all the varieties of the ophthalmoscope are not only described but figured. In regard to the choice of an instrument, Mr. Carter adds in a note:—"Until lately I should have agreed that Liebreich's small instrument is the best for the inverted image. Lately, however, the contrary testimony of very skilled observers has induced me to investigate the question with more care, and to compare the performance of different ophthalmoscopes upon eyes well adapted for testing them, and I have come to the conclusion that my former preference was the result of habit, and that the best ophthalmoscope for the inverted image is, beyond all question, that of Coccius. It illuminates the fundus somewhat less brilliantly than Liebreich's, but more uniformly; it is less interfered with by reflections of the mirror from the cornea, and by images of the flame upon the retina of the eye examined; it affords better definition, and permits the use of a higher magnifying power. Lastly, though inferior to Zehender's for the erect image, it yet shows it very fairly, and in a manner far superior to Liebreich's." In reference to the larger fixed instruments we think it useful to give the following advice of the translator:—"Such instruments should be obtained only from English makers; the foreign ones that I have seen have been at once dear and bad; the threads of their screws are always defective; the parts that should be steady quiver and shake; the parts that should glide easily stick fast; the parts that should be immovable slide downwards in tardy and reluctant obedience to the law of gravitation. By the time that all the faulty parts have been replaced in this country the instrument will be far more costly than one originally of English construction, made to work as smoothly and

easily as a microscope from the first." We have found this advice to be perfectly correct, and would recommend the reader not to trouble himself learning the truth of it by experience, the more especially as we believe there will be no difficulty in obtaining these instruments from any of the first-class London opticians.

If space permitted we would gladly give many extracts from the second section of this book; but it will suffice to state that the beginner will find in it every needful instruction as to the use of the Ophthalmoscope, no matter how elementary, that he could need; and in the many places in which the treatise of Dr. Zander was somewhat behind the knowledge of the present day, he will find the appended notes of Mr. Carter leave him nothing to be desired. The third and fourth sections are directed to the ophthalmoscopic appearances of healthy and diseased eyes, references to Liebreich's *Atlas* being always added. The fifth section considers the ophthalmoscope in its relation to forensic medicine. The sixth, which is added altogether by the translator, is on the influence of the ophthalmoscope upon the treatment of disease. We have thus very cursorily alluded to the chief contents of this volume, which is illustrated by numerous woodcuts and three coloured lithographic plates; and, in conclusion, we feel warranted in asserting that it is by far the best practical guide to the use of the ophthalmoscope that exists in our language.

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1. *Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques.* Illustré de Figures intercallées dans le texte. Directeur de la Rédaction, le Docteur Jaccoud. Tome premier, 1ere et 2eme Parties. A—Amb. Paris: Baillière et Fils. 1864. 8vo, pp. 811.

2. *Dictionnaire Encyclopédique des Sciences Médicales.* Publié sous la direction de MM. les Docteurs Raige-Delorme et A. Dechambre. Tome premier, 1ere Partie. A—Acc. Paris: Asselin. 1864. 8vo, pp. 400.

The *Dictionnaire de Médecine*, published in thirty volumes, and of which the second edition appeared in 1832, has, till the present day, maintained its position as a standard work, and has not only served

as a model for other dictionaries and cyclopedias, but has, perhaps, furnished materials for some of them to a greater extent than has been duly or fully acknowledged.

From 1832 till 1864 has, however, been a period of great progress both in medicine and its allied sciences, so that it has become necessary our works of reference should be rewritten to take due notice of the advances made during this period; and we have now before us the first numbers of two works evidently intended to compete for the position hitherto so worthily occupied by the *Dictionnaire de Médecine*.

Of the *Nouveau Dictionnaire*, which stands first on our list, we have received two numbers, or demi-volumes, completing the first volume, and comprising altogether 811 royal octavo pages, and it is announced that the work will be completed in from twelve to fifteen such volumes. It is brought out under the direction of Doctor Jaccoud, who translated Graves' *Clinical Medicine*, and who is, we have reason to know, thoroughly familiar with the medical literature of other countries as well as his own, and who promises to seek for light everywhere that it may be expected to be found. The articles are monograms by various contributors, whose names are attached; to each article a more or less extensive list of bibliographical references is appended. In the volume before us the principal articles are:—"The Introduction, by Jaccoud; Abcès, by Laugier; Abdomen, by Dénucé and Bernutz; Absorption, by Bert; Acclimatement, by Jules Rochard; Accommodation, by Liebreich; Accouchement, by Stoltz and Lorain; Acné, by Hardy; Adhérence, by Alfr. Fournier; Ages, by Lorain; Agglutinatif, by Gosselin; Agonie, by Jaccoud; Aine, by Kœberlé; Air, by Buignet A. Tardieu and J. Roshard; Aiselle, by Bæckel; Albuminurie, by Jaccoud; Alcoolisme, by A. Fournier; Aliment, by Oré; Alopécie, by Hardy; Amaurose, Amblyopie, by Liebreich; Ambulances, by Sarazin, etc."

The second work on our list, the *Dictionnaire Encyclopédique*, as its name implies, aims at a more extensive range than its rival. Brought out under equally distinguished editors, it also appears in demi-volumes, of which we have received the first, consisting of 400 pages; and we learn that the second number, finishing the volume, is well advanced towards completion. The entire work is expected to comprehend from twenty to twenty-five volumes, and will also consist of a series of monographs signed by the authors. In the number before us we perceive that, in addition to articles

parallel to those contained in the *Nouveau Dictionnaire*, we have biographical memoirs of eminent members of the profession of all countries, with lists of their writings; descriptions of mineral waters, and of health resorts; full sketches of the natural history and botanical characters of substances used in medicine; and anatomical, physiological, and chemical essays. The articles generally are of an exhaustive character—a description that applies, indeed, to both of the works, though the *Nouveau Dictionnaire* aims more exclusively than the other at the purely practical. We may, however, best display their respective characteristics by giving a brief sketch of an article from each.

Albuminuria is the subject of an article in the *Nouveau Dictionnaire*, from the pen of its editor, Dr. Jaccoud, and is not only a good specimen of the work, but is one of the best papers on the subject that we remember to have met with. It opens by defining the disease as a disorder of the renal secretion, characterized by the presence of albumen in the urine; in this way separating, under the head of pseudo-albuminuria, all those cases in which the albumen is added to the urine in its course from the kidney, after it has been secreted. Dr. Jaccoud next passes in review the theories of Bowman and Ludwig as to the mode in which urine is secreted, and rejects Bowman's idea that the corpora Malpighiana merely pour out the water of the urine, the salts being secreted by the epithelium of the tubes, in favour of Ludwig's view that all the urine is secreted by the Malpighian corpuscles as by a process of elective filtration, though in a very dilute state, and that the excess of water is absorbed in its passage through the tubuli uriniferi. Whichever theory may be adopted, and we do not coincide with Dr. Jaccoud in his preference for that of Ludwig, the process of urinary secretion, must be regarded as subordinate to the three following conditions:—

"A normal distribution of the generating liquid—that is to say integrity of the mechanical conditions of the renal circulation.

"A normal constitution of the generating liquid—that is to say integrity of the blood.

"A normal constitution of the filter—that is to say of the renal gland."

Albuminuria must depend on a disturbance of one or more of these conditions; but to embrace all forms it is necessary to have a mixed class—and Dr. Jaccoud proposes four divisions:—

"I.—Albuminuria by modification in the mechanical conditions of the renal circulation.

"II.—Albuminuria by alteration of the blood.
"III.—Albuminuria by alteration of the blood with renal lesions.
"IV.—Albuminuria by renal lesions."

I.—Both physiological experiments and pathological observations show that albuminuria may be produced by alterations in the mechanical conditions of the renal circulation; and under this head Dr. Jaccoud describes the albuminuria:—

Of *pregnancy*—except the rare cases in which it occurs during the four first months, when it depends on a different cause.

Of *disease of the heart* when it is caused by the increased pressure of the blood on the renal capillaries.

Of *paludal fevers*, that is when occurring early in the fever, and in the cold stage, and caused also by the pressure of congestion; but when occurring in the cachectic state induced by the long existence of the fever, it belongs to another class.

The albuminuria of *cholera* belongs to the same class.

Nervous albuminuria.—This, which concludes the first group, is a variety that is scarcely established. The name is given to the albuminuria that succeeds to an irritation of certain points of the central or peripheral nervous system. The vaso-motor nerves being paralyzed the small arteries become dilated and the albuminuria is the result of the increased pressure on the renal capillaries. An erroneous interpretation of experiments of Schiff and Ludwig has given rise to a premature theory attributing this form to three sources—injury of the renal nerves, of the splanchnic nerves, and pricking of the fourth ventricle; but of these the last alone has been proved.

It is important to know that of all diseases the neuroses are those that are most rarely accompanied by albuminuria. This is particularly true of epilepsy, and is an important diagnostic between this and puerperal eclampsia.

II.—*Albuminuria by Alteration of the Blood.*—It is this class of albuminurias that Dr. Jaccoud tried to establish, in a book published in 1860, and since then its position has been confirmed, but the existence of renal lesions in a great many cases where they had not then been observed, has since been shown, therefore he now makes two classes—one where there is modification of the blood only, with which we have now to do, and a class where this is combined with renal lesions.

In healthy blood albumen exists in various forms, both in the

serum and in the globules. In the serum it is found in a free state, also in combination with alkaline salts, chiefly soda, forming with this latter various definite compounds, such as the neutral, basic, and acid albuminate of soda. In red globules it exists in an entirely different molecular form, as shown by its power of crystallization, discovered by Funke; and in the white globules it is in combination with fatty matters and salts.

It has been shown, by the experiments of Willibald Schmidt, of Brücke—of Botkin, and of others, that albumen can pass or filter through animal membranes, and that in this it is affected by two influences—pressure, and the degree of concentration of the liquid itself. It has also been shown, by the experiments of Bernard, that the injection of a certain quantity of liquid albumen into the blood causes albuminuria; and it has been found that this may last several days, and that a much larger quantity of albumen escapes than had been injected. It has been shown, further, that all forms of albumen, when injected, do not act in the same way; that the albumen of egg will produce albuminuria, but that that of serum will not, so that it is impossible to attribute the effects produced by the injection to the increased vascular tension, as the effects vary with the species of albumen injected; and it has been shown that the exclusive use of albuminous food in some forms, though not in others, will produce albuminuria. It is thus shown that an increase in the quantity of the albumen in the blood will cause it to escape by the kidneys; and it further appears, from certain experiments referred to by Dr. Jaccoud, that alterations in the molecular condition of the albumen in the blood will have the same effect, though the quantity of it may not be increased. Having shown that these conditions of increased quantity, or of altered molecular constitution, may induce albuminuria without renal lesion, Dr. Jaccoud proceeds to enumerate the diseases in which it occurs, viz., some forms of dyspepsia, muscular atrophy, diseases of the respiratory organs, as phthisis, bronchitis, and pneumonia; also in pyemia, septicemia, and purpura.

III.—*Albuminuria by alteration of the Blood with Renal Lesions.*—Here microscopic examination of the urine during life, and inspection of the kidneys after death, prove the existence of renal lesion, but Dr. Jaccoud argues that this is secondary to the blood disease, and is in fact produced by it Under this head he classes infectious or contagious fevers, when a rapid and general alteration of the blood

takes place—such as eruptive fevers, diphtheria, typhus, typhoid, and yellow fever; and in reference to scarlatina he draws attention to the fact that albuminuria occurs much earlier than is generally supposed, in some cases as early as the second day of the eruption, and that it is often present when there is no dropsy. Albuminuria from chronic poisoning, as by mercury, alcohol, or lead is regarded by all as belonging to this class, the blood being first altered and the renal disease following. In acute poisoning Ollivier believes the renal disease arises from the work of elimination thrown on the kidneys, but Dr. Jaccoud argues that here too the alteration in the blood is the first step in the process. Albuminuria from cachexia, and from the retention of excrementitious products, are the last forms placed in this section, that arising from cold being included in this latter form.

IV.—*Albuminuria by Renal Lesions.*—Dr. Jaccoud limits himself to a simple enumeration of these; and he concludes this section by saying it may cause astonishment not to find a special group of albuminurias symptomatic of the various forms of Bright's disease; but these are disseminated through the preceding classes as their pathology may require.

It does not seem necessary to proceed further with our analysis of this article. It occupies seventy-six pages of the dictionary, and forms one of the most valuable monograms we know on the subject. We have devoted considerable space to it because the true significance of albuminuria is not, we think, as generally recognized as it should; and the subject is one to which we have frequently alluded before in these pages. The article concludes with remarks on the diagnosis, semeiology, and treatment of the affection.

The article we have selected as a specimen of the *Dictionnaire Encyclopédique* is one on Acclimation, written by Dr. Bertillon. It occupies fifty-four pages of the work. We have chosen it because of its being a good specimen of the complete and exhaustive manner in which the articles in general are written; but our space will not permit of our doing more than give a very brief outline of its contents. It opens with a definition of the term, and shows that though the words *acclimatement* and *acclimatation* are derived from the same root they should be differently applied; acclimation meaning the spontaneous change the organization, when transported to a new climate, undergoes to place itself in harmony with the

new conditions; acclimatization being the art of accommodating other beings to a climate which is not their own.

It is with acclimation the article proposes to deal; but before fully entering on the subject Dr. Bertillon further defines the terms he uses. Perfect acclimation implies not only that an individual has become adapted to a new climate, but that his descendants will be able to live in it, and maintain the race; anything short of this is but a pseudo acclimation. Where the difference between the native climate and the new is slight the acclimation is *petit*, when it is great it is called *grand*. Where the new climate causes chronic disease, or the premature death of the individual or his descendants, it is called inacclimation; and if he lose the acclimation he had acquired, as may occur, it is called disacclimation.

Strange as it may appear Dr. Bertillon finds it necessary to protest against the consideration of acclimation being trammelled by theological views, or by fancied relations between it and the question whether all the human race were the offspring, originally, of one pair of parents, or of many; and having thus prepared the way he proceeds, in the first place, to examine all the facts, drawn from history and philology, which bear on the subject, especially in reference to the most ancient and most important migration of which we have any trace: the Indo-European, whence sprung the Celts, Pelagians, the Hellenes, the Sclaves, the Goths, and Germans. One of the conclusions drawn from this review is that a rapid migration cannot establish a durable and prosperous colony, except on its own isothermal line, or a little to the north (colder) of it, and the success will be endangered in proportion as the migration extends beyond this towards the south (warmer).

A review of contemporary facts confirms this inference. The 10,000 French emigrants, who went to Canada from 1663 to 1760, are now more than a million of French Canadians, despite the disasters of war and a constant emigration to the United States. The acclimation of the English race in the United States of the North is equally evident, but in the southern states the acclimation is of a less decided character; and further South the emigrants are unable to even maintain their numbers. In Martinique the population increased, by emigration, from 1635 to 1740 to 15,000 whites, and 59,000 men of colour; but when war put a stop to emigration the white population decreased, though the coloured one rapidly increased. The rate of mortality in hot climates seems to increase with lapse of time. An ancient Governor of Cayenne (1742) gives

the following statistics of the mortality during his sojourn of nine years:—

Duration of sojourn,	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Mortality in 1,000,	15	19	42	21	60	75	82	102	125

The space at our command will not allow of our following Dr. Bertillon through the remainder of his examination of contemporary facts, or his remarks on the influence of race, in which he refers more particularly to the Negroes and Jews. The conclusion arrived at is that the French, English, and Germans, do not become acclimated in the Antilles, Guiana, India, Senegal, Egypt, &c.; that the acclimation of the French and Germans in Algeria is yet problematical; and that the Spaniards and Portuguese have proved theirs at the Antilles, at Mexico, in all meridional America, and even in Algeria.

Dr. Bertillon divides into four groups, or four periods, the phenomena of acclimation which develop themselves successively in a race newly displaced. Two of these concern the individual, the others his descendants.

The first period comprehends the physiological or pathological phenomena, of which the immigrant has most frequent consciousness in the first months after his arrival. To these semi-morbid symptoms there are frequently joined acute affections, more or less grave, endemic diseases often not subject to relapses, and which are, erroneously no doubt, considered as acclimatizing, such as yellow fever at the Antilles, *le bouhou* (a sort of influenza?) at Hayti, cholera in India, and certain bilious fevers at the Tropics. This first period is the only one that has been considered by authors, who generally assign to it a duration of two to three years. It is said that once these have been submitted to, and this primary modification of the organism undergone, all is finished, and there will be nothing else to endure. This is, however, a mistake arising from a misconception of the secondary, tertiary, and quaternary phenomena. This first period may be grave or light, without influencing the succeeding.

The second period assumes from the first a chronic form. There is a degradation, often insensible, of the organism; a physical and intellectual weakening—"La trame organique s'use, des rides apparaissent, l'individu vieillit: il vieillit vite." However, this old age has not always time to run through all the periods of decrepitude. In this adynamic state a population is liable to all kinds of morbid manifestations—typhus and scurvy in cold countries;

intermittent and remittent fevers, hepatitis, dysentery, in the Tropics; and these affections, far from conducing to acclimation, only develop an aptitude for relapse.

The duration of this second period is that of the life of the colonist, if it assume the characters sketched above, the acclimation of the race is far from probable; but in a second or third generation constitutions may arise suitable to the climate.

Third period.—This applies to the children of the first colonists. These, if the race be pure, do not receive from their parents the benefits of acclimation; they must themselves undergo its trials. The most assiduous care rarely enables them to go through the first years of infancy; but, if they are sent to Europe, they thrive well; showing that it is a want of harmony between the children and the climate, and not a degenerescence of the fetus that causes the mortality.

The fourth period is when the colonist has overcome these three primary periods, and when, thanks to care, to hygiene, or only to an apparent mildness of climate, the children of the second and third generation are reared, and a certain prosperity shows itself—but time puts a stop to all. Soon a degradation becomes evident, the births become less numerous; they are no longer in relation with the abundance of food; they scarcely compensate for the deaths, or leave a deficiency. Intellectual and physical activity are lowered; mercenaries and slaves become indispensable to support this weakened population, and foreign garrisons to guard and defend it, till at length, if they do not call to their aid the art of acclimatization, they soon cease to exist as a colony.

Having thus traced the conditions and phenomena of acclimation, the article concludes with suggestions on acclimatization, under the two heads of modifications to be effected in the climate, and in the organization of the individual to be placed in it. We regret that we cannot follow it to its conclusion; but we have already done enough to show our readers the style of the work.

Practical Anatomy. By Christopher Heath, F.R.C.S., Assistant Surgeon to, and Lecturer on Anatomy at, the Westminster Hospital. London: J. Churchill and Sons.

Among the numerous works on Anatomy which have recently

been published, we have not met one so much to our minds as Mr. Heath's little manual of dissections.

We willingly accord to it the highest praise it can receive, namely, the well-merited character of being thoroughly practical.

It departs, to a considerable extent, from the usual routine of English anatomical treatises, in abandoning the *systematic* method in favour of the *natural*.

Each region with its contents is examined in a brief but complete manner; and then, while the pure anatomy is fresh in the mind of the student, the medical and surgical relations of the parts are clearly and concisely alluded to. In a word, this manual combines happily the study of *applied* with *descriptive* anatomy

It is quite sufficiently complete for general use as a hand-book in the dissecting-room, and for that purpose is superior to any similar work we have seen.

Notwithstanding its moderate size, it is wonderfully exhaustive; and its practical value is greatly enhanced by the numerous and excellent illustrations, both original and borrowed, with which it is adorned. A very complete index is superadded, so as to afford the pupil every conceivable advantage.

As to the style in which the book is brought out, we shall merely observe that it is quite worthy of its eminent publisher.

A Manual of Physiology, and of the Principles of Disease. By ED. D. MAPOTHER, M.D., &c; 2nd Ed. Dublin: Fannin and Co. 1864. Fcap., 8vo, pp. 567.

TWO years ago—November, 1862—we introduced to our readers the first edition of this work, and foretold for it a ready sale. The appearance now of a second edition fully confirms the opinion we then expressed.

We perceive that this edition has been much enlarged—upwards of 70 pages, and 20 illustrations, being added; and the whole work has evidently been carefully revised. It consists of three parts: the first, a manual of physiology; the second, on the principles of disease; and the third, the examination papers on physiology and pathology, recently issued by the principal examining bodies in Ireland and England, with numbers after each question referring to the page of the book where the subject is fully discussed. We cannot doubt the value of this work to both teachers and students—to both it is capable, if rightly used, of affording most effective aid, and we commend it to the notice of both.

PART III.

MEDICAL MISCELLANY.

Reports, Retrospects, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.[a]

DR. MAYNE, President.

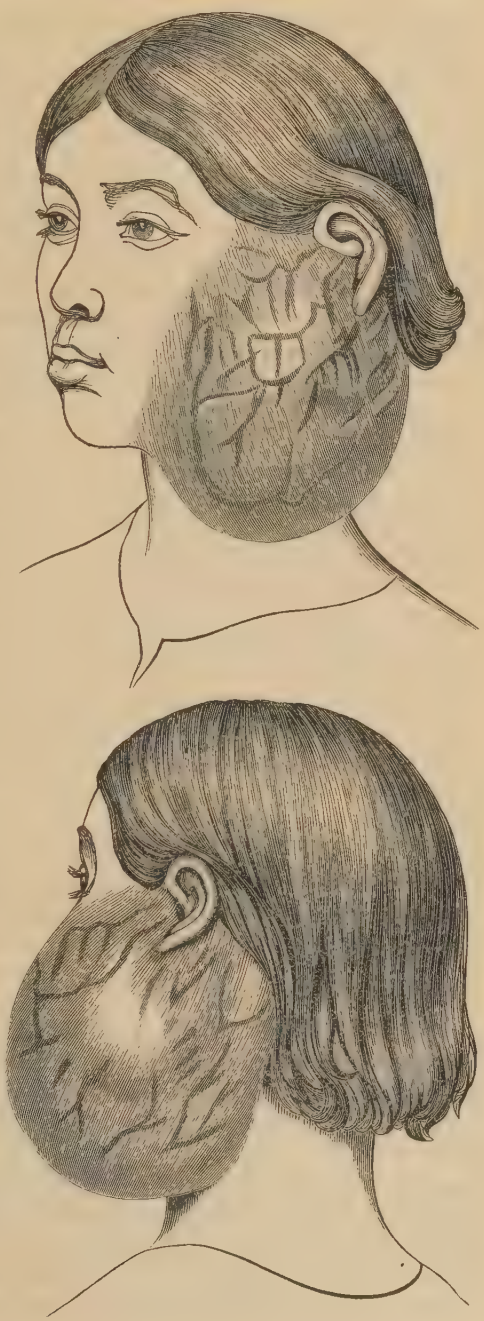
Fibro-Cystic Tumour.—DR. FLEMING exhibited a tumour which he had lately removed from the left side of the face and neck of a girl, aged eighteen years; it had displaced the lobe of the ear, and, in the vertical direction, had extended from above the zygomatic arch and mastoid process, as far downwards as a transverse line on a level with the upper edge of the cricoid cartilage. It crossed the side of the face to near the angle of the mouth; the integuments presented a dusky morbid appearance, and the external jugular vein and its tributaries were enlarged. The vertical and transverse diameters of the tumour ranged from six to eight inches. It was remarkably solid, and had a granular feel, in different portions, when the finger was passed gently over it. The fixity of the tumour in its bed was such, that it was difficult to ascertain its deep connexions with accuracy, more especially as regarded the articulation, angle, and base of the jaw. Towards the corresponding side of the pharynx there was a decided bulging, and lower down, near the commencement of the œsophagus, the tumour distinctly passed the median line. There was no difficulty of swallowing or breathing, nor any lesion of innervation. The general health of the girl was good; she suffered no pain; her sole distress arose from the deformity which the tumour occasioned, and she came from the country determined to have the tumour removed.

Three years ago she first noticed its appearance without any assignable cause, as a small movable kernel behind the ear, near the mastoid process of the temporal bone. It gradually enlarged, more rapidly during the last year, when she experienced more or less of uneasiness in it, of a

[a] These reports are furnished by Dr. R. W. Smith, Secretary to the Society.

somewhat periodic character. The catamenia had not yet been established.

It was not without very considerable doubt and hesitation that the removal of the tumour was decided upon; its rapid growth, situation, and fixity; the state of the integuments and superficial veins—all contra-indicated operative interference. Encouraged, however, by his colleagues, and strongly urged by the patient herself, Dr. Fleming determined upon performing the operation. Every step presented difficulties; the superficial and deep connexions of the tumour were so intimate as to require the most careful dissection; it adhered to the several muscles about the angle of the jaw, and was so adherent to the parotid that a portion of this gland was sliced off, and its duct divided. The sheath of the common carotid artery was exposed a short distance from the bifurcation of the vessel.



Much collapse followed the operation; the case, however, proceeded favourably, and in five weeks the girl returned to the country, with the

wound almost perfectly cicatrized, paralysis of the side of the face, however, being present.

Upon examination, the tumour was found to consist of a solid mass, presenting to the hand, when passed over its surface, numerous small rounded elevations, resembling duck-shot. The entire tumour communicated to the touch a feeling of elasticity. It was not surrounded by a distinct cyst, but was enveloped by a mass of condensed cellular tissue, which adhered rather closely to it. Its section presented the character of a fibro-cystic growth, the fibrous elements preponderating, and forming throughout the tumour, numerous bands of variable length and consistence, crossing each other in every direction, the interspaces being filled by small cysts of different forms, some being spheroidal, others flattened, and all containing a darkish yellow fluid, tinged with blood.

It was evident, from the examination of the tumour, that the entire of it had been removed, and that it was not continuous with the surrounding tissues, although adherent to them. The microscope did not satisfactorily show that it possessed any of the characters of malignant growths.

Dr. Fleming made some remarks on the great variety of tumours which occurred in the several regions of the neck, many of which had been exhibited by himself and others to the society. He noted the difficulties attendant on the differential diagnosis of such tumours, and the importance attached to their anatomical relations. The case now under consideration was in many respects unpromising, yet there were features justifying operative interference. Notwithstanding the deep and firm connexion of the tumour, it was a remarkable fact that only one vessel required the application of a ligature. Dr. Fleming expressed his great apprehension of the return of the morbid growth. The facial paralysis was to be expected—yet, at one period during the more advanced curative stages of the wound, a hope was entertained that it would have in a great manner disappeared, so much had the local muscular action been restored. Dr. Fleming alluded to the removal of a tumour, somewhat similarly circumstanced, from a man, aged forty years, by the late Mr. Carmichael. That tumour was smaller in size, much slower in growth, equally consistent in feel, but with deeper and more complicated connexions. Facial paralysis followed on the operation. The case is reported in the second volume of the *Transactions of the College of Physicians.—November* 28, 1863.

(About six months after the operation, a tumour appeared in the situation of the original growth, and slowly but steadily increased, in consequence of which the girl was again admitted into the hospital. The recurrence of the tumour was only too obvious: it was fixidly imbedded between the angle of the jaw and mastoid region; her health was good, but she complained of pain in the head, and in the situation of the tumour. Shortly after admission she was seized with fever, and was

transferred to the Hardwicke Hospital, where she died in about a week. There was no morbid growth, malignant or otherwise, found in any of the cavities. The recurrent tumour presented the same anatomical characters as those of the original growth.—*October*, 1864.)

Acute Suppurative Arthritis.—Dr. M'Dowel said, that on the 13th of February he had brought under the notice of the Society a most marked example of acute periostitis, affecting the upper extremity, and implicating the elbow joint, which terminated fatally; and he had now to draw their attention to another instance of the same disease, which also ended in the death of the patient—a boy, nineteen years of age, who had been for some years engaged in work for which his strength and constitution were unfitted.

Three days before his admission into hospital he had been attacked with febrile symptoms and pains in the joints, resembling those which usher in an attack of acute rheumatism. His pulse was rapid, and his skin hot; and he complained of severe pain in the right knee joint, which, however, presented no unnatural appearance.

Upon the second day it became evident that the pain in the knee was sympathetic; for he now complained of severe pain in the right hip, which upon examination was found to be swollen, and there was manifestly periostitis of the ilium.

Upon the following day, the third after admission, the shoulder joint became engaged; and within twenty-four hours afterwards the wrist became swollen, and a bright red blush appeared over it. Within a short period afterwards periostitis of the tibia, with distinct red patches, occurred; and a few small pustules made their appearance over the trunk, of the same nature as those so frequently found associated with blood-poisoning.

All this time the fever was of a typhoid character; there were sordes on the gums and teeth; the tongue was dry and red, and he suffered from intense thirst; he raved at night. The pain was confined to the region of the hip, and was often so intense as to cause him to scream. A large abscess formed with rapidity on the trapezius muscle. The boy became stupid and heavy, and after a few days died in a semi-comatose condition. Dating from the time that he left off work, the disease ran its course in about twenty days.

Post mortem appearances.—Two large abscesses existed, one on either side of the iliac bone beneath the muscles. In both situations the periosteum was extensively detached, so that the pus lay in direct contact with the bone, which presented a pinkish colour.

The hip joint was extensively diseased, and the cartilaginous surfaces were coated with a deposit of yellow-coloured lymph, which, with the exception of its being perfectly smooth, closely resembled that which is seen as the result of pericarditis. Such deposits, Dr. M'Dowel observed, were

very rarely met with as the result of synovial inflammation. In several places the cartilage of incrustation had undergone extensive absorption, whilst a large quantity of purulent matter filled the articulation, and communciated with the large abscess in the external iliac fossa by a round opening in the capsule towards its upper and outer side. Dr. M'Dowel believed that the ulceration of the capsule had proceeded from within outwards, and that in this respect the case under consideration further resembled the cases of periostitis with synovitis described by his late father in the 3rd and 4th volumes of the *Dublin Medical Journal*. In that communication, the late Dr. M'Dowel says:—"I am not aware of its being recorded that an iliac abscess may result from this affection; yet in four cases I have found it occur. The fluid, escaping through an opening on the inside of the capsular ligament, passes upwards behind the psoas, and ascends into the iliac fossa, dataching the muscles from the bone."[a]

In the case now recorded the purulent matter escaped through an opening on the outer side of the capsule, and passed upwards beneath the glutæi muscles into the external iliac fossa. In addition to these, which constituted the primary and more local lesions, there were found other pathological changes, which may be regarded as secondary or consecutive. Numerous patches of ecchymosis existed on the surface of the lungs, but without purulent deposits, with recent pleuritis. There was also diffuse inflammation of the kidneys, evidenced by patches of softening, with small purulent deposits in the cortical substance.—*March* 12, 1864.

Gangrene of the Lung.—Professor Law exhibited a specimen of gangrene of the lung. The subject of the disease was a man thirty-eight years of age. He had had measles badly in childhood, and from that time his chest was delicate, but not so much so as to interfere with his occupation as a carpenter. He was tolerably healthy until about the thirty-fifth year of his age. He had been married a year, and up to that time led a very regular life, and was not a drinking man. He, however, lost his wife, and afterwards drank freely, and became otherwise dissipated. He had had venereal disease, for which he was treated frequently with mercury. He had been ill, he said, for three months previous to his admission into the hospital, his health having then entirely given way. He came under Dr. Law's care labouring under an acute attack, which appeared to consist of a febrile affection and disease of the chest. Both sides of the chest when percussed emitted a dull sound, and his respiration was weak, accompanied with a loud large coarse crepitus. It appeared to be a case of double pneumonia, and was prescribed for accordingly. The day after his admission he appeared to be in a very low depressed state. Dr. Law remarked upon the wisdom

[a] Dr. M'Dowel's Observations on Periostitis, &c., Dublin Medical Journal, Vol. iv., p. 8.

of Dr. Todd's observation in reference to both heart and chest affections, that the physician will do well first to examine the constitutional symptoms before he applies himself to the examination of the local signs; as, if the latter be first examined, he may afterwards see the constitutional symptoms through a prejudiced view. The man was in such a very low depressed state that it was necessary to support him with stimulants almost immediately after he came into hospital. He seemed to improve a little, but not much. He was admitted on the 18th of February; and on the 7th of March, on entering the ward where he lay, Dr. Law perceived an extremely fetid smell, which pervaded the entire ward, and was more perceptible the nearer he approached the patient. His impression was that the case was one of gangrene of the lung. However, there was no smell from the man's breath, nor from his expectoration. Dr. Law felt it difficult to explain this, but still he had not a doubt on his mind that the disease was gangrene of the lung. On the night of the 10th of March, or rather on the following morning, about 2 o'clock, the patient was suddenly seized with an oppression of breathing. The nurse who came to him thought he was dying; however, she applied stimulants, and he recovered to a certain extent, and fell asleep for a couple of hours. When morning arrived, however, he was so ill that he wished to have his clergyman with him about 9 o'clock. He (Dr. Law) saw him at about a quarter to 10 o'clock, when he was perfectly sensible, but had no pulse; and in about half an hour after, he expired. The *post mortem* examination presented a very good specimen of what was called diffuse gangrene, occupying both lungs. There were adhesions between the pleuræ on both sides, which could hardly be separated; and on attempting a separation the fingers sank deeply into the broken-down diseased substance of the lung. There were marks of recent pleuritis; there were through the lung, and on it, fibro-cellular bands, the effects of former pleurisy; and there was also a good deal of emphysema of the edges of the base and through the whole of each lung. There were, in fact, marks all through of chronic pneumonia, and of more recent attacks of acute as well as of chronic pleurisy, besides a considerable extent of decomposed pulmonary structure. The case closely resembled one which Dr. Gordon exhibited on the previous Saturday. The peculiarity was the fetid smell. He examined the man very closely, in order to see if it proceeded from the breath, but it did not seem to do so.

Professor Law remarked that all the cases of gangrene of the lungs that had come under his observation occurred either in persons of intemperate habits, or in those who, at the time of exposure to cold, were more or less under the influence of drink. One of the preparations which he exhibited was an example of circumscribed gangrene, involving almost the entire lung. Almost the whole pulmonary structure was reduced to a

mere shreddy pulp. The dead sloughy portion was contained in a distinct cavity, whose walls were formed of a thin stratum of the pulmonary tissue. In this cavity, too, there was a quantity of blood in a state of decomposition. The patient, before his death, had had profuse hemoptysis. The subject of this case had lain out on damp hay when in a state of intoxication.

Another case of fatal gangrene of the lung that came under Dr. Law's care, occurred in a man who, when not sober, in coming on shore from a vessel in the Liffey, along the quay wall, fell into the water. He, too, had profuse hemoptysis, and the blood emitted a most fetid smell.

Another case occurred to him in the person of an English gentleman, who, while playing cricket, became heated, drank champagne, and lay down on the grass. In the evening of the day he was seized with all the symptoms of pleuro-pneumonia, for which he was actively treated by his ordinary medical attendant, a man of much experience, but who resided at a considerable distance. He got on well for about ten days, but then seemed to retrograde. He was now seized with hemoptysis, which alarmed his friends, who sent for Dr. Law—whom they knew to be more within their immediate reach than their ordinary physician. He at once recognized the characteristic fetor of gangrene of the lungs. He was requested to meet the attendant physician in consultation, which he did. He mentioned to him how his attention was arrested by the fetor both of the gentleman's breath and expectoration. The physician had not noticed this. On Dr. Law's enquiring of the friends if they had remarked it, they at once said that it was so offensive that, with every disposition to minister in every way to the comfort of the poor patient, they could not remain in his room for even a short time. The physician now, at length, admitted that he did perceive a smell, to which, he confessed, he was a stranger. He entered readily into Dr. Law's view as to the cause of the smell, and saw in it the reason why his patient had not made progress. It was at once determined to adopt a tonic treatment, and strengthen him by every means possible. It was quite remarkable what a speedy improvement took place upon this change of treatment, and which issued in a complete recovery.—*March* 19, 1864.

Cancer of the Liver.—Dr. Jennings exhibited two specimens of Farre's tubercle of the liver, obtained from patients, both males, who had died in the South Union Hospital, during the early part of the week. In the one there was co-existent scirrhus of the pancreas. In the other, the stomach and peritoneum were extensively diseased. The two cases derived peculiar interest from the fact, that while their histories during life differed in many respects, they were, on the other hand, strikingly similar in the absence of many of those symptoms which were

generally accepted as characteristic of this affection. The first patient, forty-four years of age, was originally admitted (10th November, 1863) in a state of great emaciation, and labouring under intense jaundice, which had partially become deeper in shade since its first appearance about six months previously. During this period he stated that he had chiefly suffered from pyrosis and generally deranged digestion, latterly accompanied by a constant sensation of hunger and thirst, both of which appetites were, at this time, almost insatiable. There was considerable tympanitis, and the outline of the liver could be traced increased in extent, but presenting no irregularity of surface.

After the lapse of a few days, he left the hospital, not returning until the 6th January following, when he remained until the 23rd of that month suffering from his former symptoms. During this time the alvine discharges were always more or less deeply tinged with bile.

On the 29th February he was again admitted, much worse, in every respect—weaker, more emaciated, with total loss of appetite, insatiable thirst, and occasional vomiting of colourless fluids. The motions were now found to present the familiar clay colour.

At no period of this illness did he suffer from constipation; nor while under observation was pain present until a few days before death—not even was tenderness on palpation well marked; vomiting was only occasionally present, but not until near the close of the case—an unusual circumstance to which attention had been directed many years ago, by Dr. Greene of this city.

To the very last, also, the total absence of delirium was most remarkable, which even the vicarious action of the kidneys, loaded as the urine was, with bilious elements, failed to satisfactorily explain; nor did he even present the faintest trace of ascites or anasarca.

Notwithstanding the absence of these valuable aids to diagnosis, the patient's freedom from any strumous taint, his age, great emaciation, and marked cachexia, sufficiently declared the malignant nature of the disease.

On opening the abdomen its contents were seen deeply tinged with bile. The stomach was enormously distended with colourless fluid and masses of white curd-like matter; but free from disease in all its coats. The gall-bladder was expanded to about the size of an ostrich egg, and filled with bile. The hepatic and choledic ducts were greatly dilated and thinned. There was no peritoneal effusion; but the membrane was generally thickened and adherent in the vicinity of the disease, from chronic inflammation. The liver was of a dark green colour, from bilious engorgement, and studded throughout with the tubercles of Farre, and the pancreas, especially at its head, was converted into a scirrhus mass, which, by pressure, had completely occluded the choledic duct, forbidding the passage even of a fine probe. The duodenum was healthy and its calibre undiminished. Death occurred from exhaustion.

The second specimen was taken from the body of a man of forty-seven years of age, who had applied for treatment on the 16th February last, and whose illness had commenced some ten or twelve months previously. Attention was immediately arrested by his peculiar aspect and leaden colour, so usually expressive of malignant disease. The most prominent of his symptoms were emaciation, though, by no means, to such an extent as in the former case—sleeplessness; anorexia; great thirst; pain and tenderness over the liver, which was manifestly greatly enlarged. There was not the faintest trace of jaundice, and nausea only declared itself occasionally during the last ten days of his life, being then relieved by the use of the solution of bismuth, brandy, &c. He never suffered in the slightest degree from constipation, anasarca, or ascites. For the last few days low muttering delirium set in, and during the final twenty-four hours of his life he lay in a comatose condition.

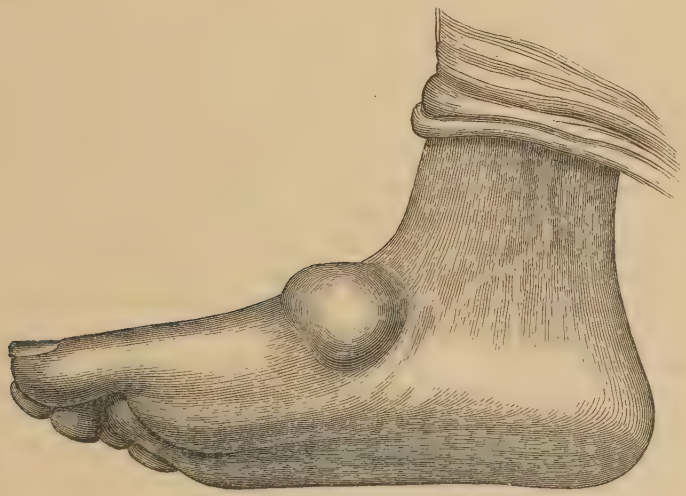
The autopsy showed the great and lesser omenta, thickly covered with oval-shaped scirrhous tubercles; as also was the peritoneum lining the under surface of the diaphragm to which, and to the costal cartilages, the liver was firmly adherent in several places. The liver itself was enormously increased in size and weight, and was everywhere occupied with large white scirrhous masses. The gall-bladder was normal in appearance, and its ducts pervious. Imbedded in the layers of the lesser omentum and near the pylorus lay a large scirrhous mass compressing somewhat this extremity of the stomach.

Dr. J. concluded by saying that when this case, in which the liver had more or less perfectly discharged its functions to the very last, was contrasted with the former, it seemed almost inexplicable why delirium and coma should have appeared, having been completely absent where the presence of these symptoms would more naturally have been expected.—*March* 19, 1864.

Dislocation of the Internal Cuneiform Bone.—Professor R. W. Smith exhibited a cast of a luxation of the internal cuneiform bone. The accident happened at Rome, about three years ago. The gentleman, Mr. B., who was the subject of it had been out riding; and just as he reached the vicinity of the stable on his return (his feet not been in the stirrups at the time), the horse slipped and fell sideways, the weight of his body pressing on the gentleman's right foot, which came against the edge of the flagway. A surgeon was at once sent for, who made ineffectual efforts to reduce the luxated bone, which has ever since remained displaced. When passing through Paris, on his way home, he consulted Nélaton, who did not think it prudent to make any attempt to restore the bone to its place, as a long period had then elapsed since the occurrence of the accident. The functions of the foot have now been completely regained, as evidence

of which it may be mentioned that Mr. B. lately crossed eighteen feet of water in a running jump.

The arch of the foot is nearly altogether effaced, and at its inner side the displaced bone forms a very striking prominence; it has been thrown almost directly inwards, its surfaces retaining their natural aspects, the internal being directed perhaps a little more upwards than in the normal condition; the foot in front of the ankle joint presents an elongated appearance.



Professor Smith observed that, as far as he could ascertain, this was but the fourth case to be found in the records of surgery of this remarkable displacement. Sir Astley Cooper mentions his having seen two examples of it, both of which presented the same appearances, there being a great projection of the bone inwards, and some degree of elevation, from its being drawn up by the action of the tibialis anticus muscle. In neither case was the bone restored to its natural position. The cause of the accident in one of the cases was a fall from a great height; in the other, a horse fell with his rider, and the foot was caught between the animal and the curb-stone.

M. Nélaton has recorded an example of compound luxation of the great cuneiform bone caused by the passage of the wheel of a carriage across the foot; the bone was extracted, and the patient recovered perfectly.—*March* 19, 1864.

Emphysema.—Dr. Law exhibited a specimen of extensive emphysema of both lungs. The subject from whom it was taken was a woman about forty years of age, who had been more than once under his care for

bronchitis and emphysema. She was tolerably well during the Summer; but when Winter set in she always became oppressed with severe dyspnea. There was universal emphysema, with bronchitis, to such a degree, that scarcely any benefit was expected from treatment; however, she made a slight rally. Dr. Law observed that in the whole course of his experience he had never observed the same amount of cyanosis as in this case. The entire surface was perfectly livid, and she was quite cold. She lived for some time, becoming now a little better, and again worse; at length the limbs, and ultimately the body, began to swell. Dr. Law tried to act upon the kidneys, and with partial success for some time; but at length the urinary secretion seemed to be entirely suppressed. Although she seemed to be in a weak state, he directed a small quantity of elaterium—the sixth of a grain—to be given to her; this produced a remarkable effect in reducing the swelling. The chief reason why he alluded to this was, that the diuretic medicine which was tried before did not produce the least effect, but after the administration of the elaterium caused the kidneys to act freely. About four days before her death she began to rave. She informed him each morning that the nurse had given her chloroform largely, and that it had produced a most uncommonly strong effect upon her. She fell into a deep coma, and so expired.

Upon examination of the body, the following appearances presented themselves:—A large quantity of pure serum was found in the cavity of the right pleura, and the lungs exhibited as perfect a specimen of emphysema as he had ever witnessed. There was not a portion of either lung that did not appear to be emphysematous; not alone were the air cells dilated, but the air was extensively diffused through the inter-lobular cellular tissue, and under the pleura covering the lung. The heart, although it exhibited the dilated right ventricle, and the hypertrophy of the left ventricle, so constantly observed in cases of extensive pulmonary emphysema, did not present these abnormal conditions as strikingly as might have been expected from the extent of the emphysema.

Dr. Law remarked upon the great diversity of opinion that had prevailed upon the mode in which emphysema occurred. While it was admitted that it generally originated with bronchitis, it was no longer supposed that it was the portion of lung affected with bronchitis that became emphysematous; that the air passing through the contracted bronchial tube was retained in the vesicular structure beyond the contraction, and, accumulating there, induced a permanently inflated condition of it. Dr. Gairdner proved the error of this view, by showing that, when a bronchial tube is partially obstructed or narrowed, the portion of the vesicular structure of the lung that lies beyond the constriction, so far from becoming inflated, falls into a state of collapse; and that it is in fact the portion of lung not affected with bronchitis that becomes emphysematous, in consequence of the air (that experienced a difficulty in entering into the affected part)

making its way where it met with no obstruction, and in unusual quantity, thus distending the cells, and ultimately weakening their elasticity or contractile power, and so inducing their permanent inflation. Each successive attack of bronchitis increased the emphysema, until it involved more or less of the organs of inspiration, and caused death, either directly through those organs, or through the cardiac affection that so frequently resulted.

Dr. Law reverted to the observation that he made relative to the dilation of the right ventricle of the heart, and the hypertrophy of the left, which, although they did exist, were less in this case than might have been expected from the extent of the emphysema. He thought he found an explanation of this disproportion in the dropsy, much in the same way as the enlargement of the spleen in cirrhosis of the liver is observed to bear an inverse proportion to the dropsy: when there is no dropsy in cirrhosis of the liver, the spleen becomes very much enlarged; but when the dropsy is moderate, the enlargement of the spleen is inconsiderable; and, when the effusion is very considerable, the splenic tumour is often not perceptible. When, in cirrhosis of the liver, the spleen becomes enlarged, it is because it becomes the diverticulum of the blood that should pass through the former organ. Just as the occurrence of ascites relieves the spleen, Dr. Law is of opinion that dropsy in the same way relieves the heart of the blood which would otherwise be retained in it, and thus produce permanent dilatation. He believed that a very close analogy existed between the cirrhosed liver and its influence on the spleen, and the emphysematous lung and its influence on the heart; and that, as observation had established the fact that as the condition of the spleen was modified by the presence or absence of dropsy in cirrhosis of the liver, so future observation would recognize a similar modification of the condition of the heart in emphysema of the lung, according to the presence or absence of dropsy. The organs of the abdomen also presented some interesting morbid appearances. The woman had before her death considerable vomiting, and discharged from her stomach a great quantity of black matter, resembling coffee grounds. Dr. Law believed that a sufficient explanation of it was to be found in the ecchymosed condition of the submucous cellular membrane of the stomach, consequent upon the difficult transmission of the blood through the lungs. This vascular condition of the mucous membrane of the stomach producing ecchymosis was not of infrequent occurrence in heart disease, and was the immediate cause of the death of George IV. The liver presented an extremely good specimen of the nutmeg liver, the pathology of which was still involved in some degree of obscurity. There were also fibro-cellular bands, of various lengths, between the upper surface of the liver and the diaphragm; a similar structure dipping into the substance of the organ, in contracting, had caused the organ to assume the lobulated appearance.—*April* 2, 1864.

Pelvic Abscess.—Dr. Stokes said he had been requested by Mr. O'Ferrall to submit the pathological specimen which he now laid before the society, and which had been taken from the body of a young woman who died in St. Vincent's Hospital. The history of the case was a curious one. About four months ago this young woman discovered a small tumour at the lower part of her abdomen, at the left side, which was attended at the time with some pain. Under medical advice she applied a blister, which relieved her, and she thought very little of the illness until she became attacked with a peculiar form of diarrhea, alternating with fits of constipation. She then came to St. Vincent's Hospital, and was admitted under the care of Mr. O'Ferrall. Upon examining the alvine discharges, it was ascertained that they consisted, in a great measure, of perfectly formed purulent matter. In this state she continued for about a month, when a new feature was developed. The urine became suddenly loaded with purulent matter; and in this state, with purulent discharges from her bowels and bladder, the patient continued during several weeks. The last phase of the disease was, that she was suddenly seized with symptoms of peritonitis, evidently proceeding from perforation, under which she sank in the course of twelve hours. The diagnosis formed by Mr. O'Ferrall was, that an abscess existed somewhere in the region of the uterus or ovary, or embracing both; and that it communicated first with the rectum, next with the bladder, and lastly with the peritoneum. The patient was unmarried; and as to the exciting cause of the disease nothing seemed to be known. It was certain that she had not had gonorrhea, which is occasionally an exciting cause of ovaritis.

The *post mortem* examination showed that the cavity of the abscess opened into the rectum by two large sloughs. The peritoneum was extensively inflamed, and the whole of it covered with purulent matter and lymph. The tumour, which seemed to have had its origin in the ovary, was full of purulent matter, but no fistulous communication existed between it and any of the surrounding parts. It was very remarkable that as long as the woman remained in the recumbent position there was no diarrhea, but it came on whenever she assumed the erect posture.—*April* 2, 1864.

Thrombosis of the Heart.—Dr. Hayden presented to the society a remarkable specimen of thrombosis of the heart, taken from the body of a man, about forty years of age, who was the subject of angular curvature of the spine. He had been accustomed to earn his livelihood by the sale of vegetables, under an archway, and was thereby exposed to currents of air and severe cold. While thus exposed, during the early part of February last, he experienced severe pain in the chest, accompanied with cough and great dyspnea. For this attack he was treated by one of the

city dispensary physicians, until the 11th of March, the date of his entrance into the Mater Misericordiæ Hospital. At the time of his admission his symptoms were the following:—The face and extremities were deeply congested; the dyspnea from which he suffered was extreme; his pulse was irregular, and occasionally intermittent; there was tenderness over the region of the liver, and venous pulsation at the root of the neck on the right side; the chest was resonant throughout; the respiration was feeble, and greatly hurried; and expiration was prolonged, and accompanied with loud bronchial râles. The area of precordial dulness was considerably diminished; the heart pulsated behind the lower extremity of the sternum; its action was tumultuous, but, owing to the loud bronchial râle, and the restlessness of the patient, it was impossible to determine whether or not it was accompanied with cardiac murmur. The diagnosis at which he arrived was, that this was a case of emphysema of the lungs, with superinduced bronchitis; engorged right cavities of the heart, and probably congested liver.

Under treatment the patient appeared to undergo a slight improvement, and now for the first time, after several weeks, he was able to lie down and enjoy some sleep. Moreover, the bronchial râles became so much less loud that it was now possible to make a satisfactory examination of the heart, and to determine the absence of cardiac murmur; both sounds were distinctly audible. This improvement, however, was only of temporary duration. In a short time the symptoms returned in an aggravated form. The pulse became again feeble, irregular, and occasionally intermittent; the extremities became cold; the patient was unable to lie down; and on examining his heart, now for the first time a murmur was audible over the base; it was systolic, and traceable upwards over the course of the aorta. It was, moreover, remarked that there was now a total absence of the second sound of the heart, which was not represented by any murmur whatever. The man's symptoms became daily more aggravated; and on the 27th, about five in the evening, he expired.

On examining the body, they found that both lungs were emphysematous, and the lower lobe of the right congested deeply, and obviously in the first stage of pneumonia; the branch of the pulmonary artery which supplied this lobe was deeply tinted red. The lining membrane of this vessel was obviously the subject of acute inflammation, coincidently with that of the parenchyma of the inferior lobe; the superior lobe was simply emphysematous, and not at all congested; the left lung was affected only with emphysema. The pericardium was partially filled with serum; and its lining membrane was opaque, thick, and in certain situations presented a number of nodular deposits of recently effused lymph. The heart was considerably hypertrophied, and there were large deposits of fat in the cardiac sulci. The right auricle did not contain blood, and was considerably dilated; towards the upper part was found a band of decolourized

fibrin that had its origin in the auricular appendix, and thence descended through the auriculo-ventricular opening into the right ventricle, and was entangled in the musculi pectinati of the appendix. The entire cavity of the right ventricle was filled with a mass of decolourized fibrin, which extended by its branches into all the recesses between the carneæ columnæ and the chordæ tendineæ.

The appearances presented by this mass on the recent section might not inaptly be compared to the section of a Swedish turnip, the centre being somewhat liquefied, while the circumferential portion was perfectly firm. The band of fibrin already spoken of as extending from the right auricle into the ventricles was connected with this great mass in the latter cavity. It was, moreover, observable that the clot itself was inextricably entangled with the anterior and left segments of the tricuspid valve; whereas the posterior segment, which is attached to the septum ventriculorum, was quite free. It was impossible to detach the thrombus without lacerating the valves. Nodules of lymph, evidently not of recent formation, were deposited on the auriculo-ventricular valve, as seen from its auricular aspect; the ventricular aspect, likewise, presented appearances of some importance: thus the right segment of the valve was immensely congested as contrasted with the remaining portion of the interior of the ventricle, which was perfectly normal in appearance. On passing to the left side of the heart, he found there likewise a thrombus (not at all of the same magnitude as the former one), occupying the left ventricle, and having its roots entangled with some of the columnæ carneæ of that cavity, near the apex, and extending from thence to the aortic opening, through which it passed into the aorta; it was somewhat cylindrical in figure, perfectly decolourized, and lay in the axis of the passage between the segments of the aortic valve, in such a manner as effectually to prevent their mutual apposition or complete tension, without interfering materially with the efflux of blood, or permitting its reflux into the ventricle. It was manifest that this state of things was competent to abolish the second sound of the heart. It was manifest likewise, that, inasmuch as it lay in the axis of the opening, it was competent to cause an eddy in the outgoing current of blood, and thereby to occasion a murmur with the first sound of the heart. It would be vain to speculate upon the significance of the facts now mentioned. Suffice it to say that they had not as yet arrived at an accurate diagnosis of thrombus of the heart. One fact in connexion with the case was of great interest, namely, the coincidence of the abolition of the second sound of the heart and the development of murmur with the first sound towards the close of the patient's illness (neither of these phenomena having existed previously).

Dr. Stokes mentions a very interesting case which occurred in the practice of the late Mr. Rynd, in which there was a thrombus of the left ventricle passing through the aortic opening, and causing the development,

towards the close of the patient's illness, of a murmur which was audible behind the lower end of the sternum; but it did not appear from the report of the case whether the murmur was systolic, or whether there was any alteration of the second sound of the heart, or whether it was or was not abolished. It would be difficult, in the case now before the society, to say at what period the vast thrombus which occupied the right ventricle was formed. They had, of course, in the condition of the lungs, and in the hypertrophied state of the heart, sufficient to explain the symptoms which the patient exhibited, without having recourse to the supposition that the thrombus existed at the time the patient first came under observation: still he thought they must admit, looking at the decolourized condition of the mass of lymph—considering, moreover, the fact that the central part of it under the microscope appeared to be undergoing disintegration, and consisted of broken up fibrin, and a number of granular cells—that it was fair to argue that this thrombus had occupied the right ventricle of the heart of the patient considerably anterior to his death.

They had, moreover, what appeared to him to be an unique feature in this case, namely, evidence of inflammatory action in the auriculo-ventricular valvular apparatus on the right side, with a deposit of lymph on it, and they had the thrombus entangled in this valve. It would, then, appear as if that was the starting point of the formation of the thrombus; and that it then extended by prolongation to the right ventricle, and in the course of the current of blood, and became augmented by successive deposits until it came to occupy the entire cavity. It was difficult to suppose that so large a mass could have existed for a long time without effectually preventing the circulation of the blood, at least in volume, through the right ventricle. If water were poured into the right auricle, it would pass into the right ventricle over the clot; and moreover, it would pass with great facility into the pulmonary artery. On pouring water into the pulmonary artery, he determined that its valvular apparatus was unaffected; but on pouring it into the aorta, the water passed into the left ventricle, but very slowly, clearly showing that, owing to the polypus on that side, the function of the aortic valvular apparatus was in some measure in abeyance.—*April 2nd*, 1864.

Bright's Disease of the Kidney.—Dr. MacSwiney exhibited a specimen of Bright's disease of the kidney, taken from the body of a woman, aged about 36 years, who was received into Jervis-street Hospital, on the 30th of March last. She was then in an insensible condition; and the man who brought her to the hospital stated that she had been attacked with "fits" in the course of the preceding night, *i. e.*, a few hours before she was admitted. When Dr. MacSwiney saw her in the morning, she lay coiled up in the bed, motionless, insensible, and breathing heavily. Her face

was pallid, or rather indeed sallow; her eyelids half open, the eyes turned up, fixed, and staring; and the pupils dilated, and insensible to light. The pulse was slow and weak; her mouth was partially open, and a small quantity of a dirty-looking fluid was trickling from it. She had vomited some of the same kind of fluid three or four times since her reception into the hospital. Whilst inquiring into the particulars of her case at the bedside, she was suddenly seized with a very severe attack of clonic convulsions, which was preceeded by a sort of low moan, during which her breathing seemed to be suspended, and her arms, legs, and head violently jerked backwards. Her face had a somewhat puffy appearance; and, reasoning from this symptom, from her aspect, and from the character of the convulsions, Dr. MacSwiney concluded that the case was one of uremic poisoning. The urine was highly albuminous. She remained in a state of unconsciousness for about thirty hours, during which period frequent attacks of convulsions—similar to those already described—occurred. After this time, however, she recovered for some hours, so far as to be able to sit up in the bed and take some light food. She could speak also, but not fluently nor rationally. The fits again returned, however; and she died, worn out, on the 3rd of April. No history of this woman's case could be obtained at first, but it was subsequently ascertained that she belonged to the class of "*unfortunates*," and had led a very intemperate life. The *post mortem* appearances, were, in brief, as follows :—The vessels of the brain were much congested with dark-coloured blood. The arachnoid was thickened, and quite opaque where it stretched across the central sulci. Sections into the substance of the brain showed that organ to be considerably congested; but there was no blood effused, nor was there any fluid in the ventricles. The lungs and heart were healthy, as were also the abdominal viscera, with the exception of the kidneys which where small and contracted lobulated on the surface, and hard in consistence. The investing capsules were closely adherent. When cut open, they exhibited striking examples of the diseased state of their cortical portion so often met with in fatal cases of Bright's disease, where there is impairment and obstruction of the secreting tissue of the gland. The ovaries were diseased, being atrophied and converted into cystic growths, containing a curdy fluid. The bladder was adherent to the uterus.—*April* 16, 1864.

Chronic Inflammation of the Testicle; *Suppuration of the Tunica Vaginalis.*—Mr. Hamilton, in bringing before the society a case of disease of the testicle, observed that the operation of castration was usually employed where the disease was of a malignant character, and was consequently most unsatisfactory, inasmuch as the disease very generally returned. Still the surgeon felt it to be his duty to remove the testicle in such cases, as the only chance, though a slight one, of freeing the patient from a malady almost inevitably fatal. They were also, however, called on to undertake

the operation when the disease was not malignant, but of an incurable character—for instance, in strumous diseases of the testicle; in cystic disease, of which he had formerly exhibited a specimen; and in some cases of chronic inflammation, which had ended in disorganization of the gland. In chronic inflammation, with enlargement and induration, it might appear that the removal of the testicle was not of urgent necessity. It will be found, however, that an enlarged testicle is a serious inconvenience; it is very subject to injury, and by its weight drags on the nerves of the chord, and causes pain in the back, preventing the sufferer in some cases from following his usual avocations. For example, Mr. H. removed a testicle from a groom, who was prevented by it from earning a livelihood. The case he was about to exhibit was one of this class. The man was admitted into hospital with disease of the left testicle, the tumour being of the size of a small cocoa-nut. It was red and œdematous, and there was adhesion between the tunica vaginalis and the enlarged testicle. It appeared to be a case of abscess of the testicle itself, which was making its way towards the surface. The man was an engine boiler worker, and about three years ago he received a blow on the testicle from a piece of flying iron. Acute inflammation was rapidly set up, and then it subsided into the chronic state; but there had been evidently great enlargement of the testicle; and though it continued large, it was not painful, and the man was able to attend to his work. Two months before his admission into hospital he was struck a second time with a piece of iron on the diseased testicle. Acute inflammation was at once excited; and when he was admitted, there was an open abscess, giving exit to a profuse discharge of matter, and the man seemed to suffer a good deal. Having allowed the violence of the inflammation to subside, he examined the testicle more carefully, and found that both it and the chord were enlarged and hard. Its removal was recommended, and the man willingly assented to the performance of the operation. In ordinary cases of castration the operation was one of the most simple in surgery; but in the present case it was not quite so easy, owing to the existence of adhesions, which rendered rather more than the usual amount of dissection requisite. The testicle was not so much diseased as he anticipated; and the abscess was not in it, but in the tunica vaginalis. In a portion of the epididymis there was a collection of pus. The testicle was not enlarged to any great extent. The surface of the tunica vaginalis was considerably diseased, and presented a granular appearance corresponding to the surface of the testicle. There was a quantity of hard, semi-cartilaginous lymph. At the first glance the testicle would seem to be but little diseased, but it was his belief that it was extensively affected, and presented that appearance peculiar to chronic inflammation of the testicle under certain circumstances. Sir Benjamin Brodie states that in chronic inflammation of the testicle, the usual pathological condition is that of yellow tubercle in the substance

of the gland; but this was not the only form. Mr. H. believed that chronic inflammation effected other changes, such as were observed in this testicle and that of the groom which he had already exhibited to the society, and of which he now presented a drawing by Mr. Connolly. The testicle is enlarged; the tunica albuginea from an eighth to a quarter of an inch in thickness; the substance of the testicle of a dull yellow colour, contrasting strongly with the pinkish-grey of the healthy gland; the tubuli being found in the microscope larger than natural, and not containing spermatozoa, but only seminal vesicles.—*April* 16, 1864.

Pericarditis.—Dr. Henry Kennedy exhibited a specimen of acute pericarditis, complicated with blue pneumonia, and double pleuritis, the amount of lymph on the pleura being small, but the liquid effusion, on both sides, very considerable. The diseased parts were taken from the body of a girl, aged 20 years, who was admitted, on the 14th of March, into Cork-street Hospital. She laboured under fever, the symptoms of which were unusually high, the pulse from the very first beating 140; the pain was of a most intense character, and the general distress very great. On the second day after admission some of the larger joints presented all the characters of acute rheumatism; but there was also severe pain where there was no swelling. Though the signs of pericarditis were looked for again and again, *frottement* could not be detected; but the condition of the lungs was easily diagnosed. Treatment seemed to be utterly powerless, and the patient got no relief from her great suffering; the disease lasted fourteen days, and seemed to partake of the nature of "diffuse inflammation;" and this idea was confirmed by the fact that throughout the left lung there were scattered nodules of lymph, quite independent of the blue pneumonia at its base. The most remarkable feature in the history of the case was the absence of what was justly considered the most diagnostic sign of pericarditis—*frottement*. The pericardium presented a fine specimen of recent inflammation; lymph was copiously deposited, and presented a reticulated appearance, whilst the liquid effusion was very moderate. The slightest possible adhesions existed anteriorly, and were broken on merely raising the front of the pericardium; so that all the conditons were present which ought to have afforded a *frottement*, and yet it was not heard. The only explanation he could offer was, that the very rapid action of the heart prevented development. A *bruit de soufflet*, it was well known, would disappear from this cause; was it not possible that, under similar circumstances, a *frottement* might not be developed?—*April* 16, 1864.

Congenital Malformation of the Left Upper Extremity.—Dr. Barton presented a cast and preparation illustrative of a singular arrest of development of the left upper extremity, and gave the following account of the case:—

"The individual in whom this remarkable deformity occurred was a young man, aged 29 years, who called on me about eighteen months ago, complaining of many of the symptoms of phthisis. While he was taking off his clothes to have his chest examined, I observed that the left sleeve of his coat hung loose, and asked him how he had lost his arm. He replied that he had not lost it, for he never had a left arm. His clothes being removed, a bony prominence was seen, extending upwards for about two inches where the shoulder should have been. This was the acromion process; and so prominent was it, that, to prevent the skin ulcerating, he was obliged to wear a soft pad under his coat. About three inches below this prominence there projected from the integument a finger and thumb, having apparently no connexion with the scapula, and merely attached to the skin. They were natural as to heat and sensation, but he had no power of moving them. There was a clavicle of normal length, but directed very much upwards and backwards from its sternal extremity.

"About a fortnight ago he died of phthisis in the Adelaide Hospital. A cast of the side having been taken, the clavicle, scapula, and rudimental hand, were carefully removed. Examining each of these parts in detail, we find the clavicle strong and large at its sternal extremity, gradually diminishing in size and strength as it passes outwards; the inner curve occupies nine-tenths of the whole length of the bone; the outer curve forming a little hook at its extremity, where it rests on the acromion. The scapula is not more than half its natural size, and its angles are remarkably pointed. The coracoid process is represented by a bony tubercle below the prominent acromion; there is no articular surface, but a dense fibrous tissue connects this tubercle with the rudimentary hand, which projects three inches from the skin.

"The hand consists of a thumb and a finger, the former being composed of a metacarpal bone and two phalanges, the latter of a metacarpal bone and three phalanges. There are no separate carpal bones, but at the base of each metacarpal there is a sort of tubercle, which seems to represent the trapezium and os magnum.

"As regards the nervous supply of this representative hand, the median sends branches to the thumb and outer side of the finger; while the ulnar supplies the inner side and the skin.

"Although there are no muscles connected with these fingers, the two flexor tendons are arranged and inserted as usual; the flexor profundus, after perforating the tendon of the flexor sublimis, passes to the last phalanx, the latter being inserted into the second phalanx. The trunk of the body, the right arm, and both lower extremities, were developed in a perfectly natural manner.

"In this remarkable case, we have in a body otherwise perfectly formed the left clavicle altered in shape, the scapula but partially formed, no humerus, radius, ulna, or carpal bones, two metacarpal, and five phalanges,

twenty-three of the thirty-two bones of the extremity being entirely wanting.

"We cannot suppose that this state of parts was produced by intra-uterine amputation, for there is no stump, nor in any of the cases described by Dr. Montgomery, or by Dr. Simpson, were there any fingers, such as exist here."—*April* 16, 1864.

Stricture of the Pylorus.—Dr. Stokes said, that Mr. O'Ferrall had requested him to lay before the society a specimen of stricture of the pylorus, with extraordinary occlusion of the orifice. The patient had the usual attacks of vomiting, throwing up great quantities of fluid, and asserting that she vomited a great deal more than she swallowed. Previous to the specimen being brought into the room, Dr. Stokes tried to force the contents of the stomach through the pyloric orifice, but could not succeed in doing so. It was completely surrounded by a large indurated mass, which engaged the coats of the stomach over an extent of about three inches, giving them a leathery hardness, which terminated abruptly in the healthier structures. The duodenum was not at all engaged in the disease; the stomach was very much distended, and was full of fluid. It was unnecessary to enter particularly into the details of the case, as it in no respect differed from those already brought under the notice of the profession by Mr. O'Ferrall.—*April* 16, 1864.

Absence of the Tongue.—Dr. Banon detailed a remarkable case, and exhibited a specimen in which the tongue was absent for the greater portion of the patient's life. The patient came under his notice in the month of June last year, having been committed to the Richmond Prison as a vagrant, on the 1st of that month, and dying eight days subsequently in the prison hospital, of bronchitis. He was upwards of sixty years of age, and stated that generally his health had been good. Dr. Banon, on first seeing him, was struck with his very imperfect articulation, and still more so by his inability to protrude his tongue on being asked to do so, and the total absence of that organ which a closer examination revealed. On opening the mouth, nothing resembling the tongue could either be felt or seen; and the parts now exhibited (including the lower jaw, palate, pharynx, and larynx), present almost the same appearance as during life. The interior of the mouth presents a perfectly smooth surface (not even a projection indicating the former site of the tongue), covered with mucous membrane, and becoming firmer as the finger approached the front of the epiglottis. Beneath the mucous membrane are a few muscular fibres, with abundant cellular tissue. The epiglottis, larynx, and pharynx, and in fact all the surrounding organs, appear to be perfectly normal. The history Dr. Banon was enabled to obtain from him of his case was, that when a child he was attacked with ulceration of the tongue, which he

attributed to a habit of placing copper coins and buttons in his mouth, and retaining them there. The ulceration continuing, and his articulation becoming affected, he applied to some of the hospitals, but without obtaining any relief. The tongue gradually disappeared, and his articulation became so bad that he could not make himself understood; but after the lapse of some years it improved so much, that, with the exception of not being able to pronounce certain words, he suffered but little inconvenience. His deglutition was never seriously affected. Dr. Banon was at a loss to fix on the exact nature of the disease which resulted in the destruction of the tongue in this case. That it was not syphilitic ulceration may be inferred from the early age at which the patient was attacked, and his subsequent excellent health. Whether the disease was atrophy or ulceration, or could have resulted, as the patient thought, from the contact of the copper coins, are questions Dr. Banon considered worthy the attention of the society. Cases of absence of the greater portion of the tongue from operation or disease, and, in former times, from malefactors being condemned to have it removed, are recorded, and it is even stated to have been congenitally absent; but it is seldom indeed that so complete an absence of the organ has been seen as in the case now exhibited to the society. The gradual improvement of the articulation which occurred in this case has also been noticed by Louis in a memoir in the 5th volume of the *Memoires de L'Academie Chirurgicale*, in which the individual in whom the greater portion of the tongue was absent suffered at first from very imperfect articulation and deglutition, but gradually improved in these respects in a very marked degree. In Malgaigne's edition of Ambrose Parè, 1840,Tom. II., p. 608, a description is given of a case of a man who had his tongue almost completely cut off, who lost the use of speech completely for three years, but was afterwards enabled to make himself understood by words, by inserting under the remaining stump of the tongue a thin slice of wood. Dr. Banon regretted that the history of this case, which he had obtained with great difficulty, owing to the sinking state of the patient when he first saw him, was not more perfect, as he was sure the society would agree with him in considering the case and the state of parts which he had now the honour of exhibiting, as most rare and interesting.—*April* 16, 1864.

Abscess between the Œsophagus and Trachea.—Tracheotomy.—Dr. Hayden said that the specimen which he had to exhibit to the Society was taken from the body of a man, aged fifty years, who was admitted into the Mater Misericordiæ Hospital on the evening of the 12th of April. He had supported himself by keeping a fruit stall in the neighbourhood of Dublin, and had been under treatment for a severe cold a month previous to his admission. On the evening of the 8th of April he was suddenly attacked with symptoms of difficult respiration, and slight dysphagia;

beyond this they were able to learn nothing of his previous history. When he saw him on the morning of the 13th of April, for the first time, he was suffering from symptoms of imminent asphyxia. The surface was cold, the extremities livid; and he was languid, and had a leaden-coloured aspect. He could swallow even fluids with difficulty; the pulse was rapid, feeble, and intermittent, and there was a loud laryngeal stridor. The chest was universally resonant; but, owing to the small quantity of air that entered the lungs, it was not possible to obtain satisfactory evidence as to the state of those organs from a stethoscopic examination. There was, however, no evidence of organic disease of the lungs or the vascular system; it was therefore thought advisable to perform the operation of tracheotomy, which was done on the 13th, and was followed by immediate relief. His surface became warm, the pulse came down from 126 to 90, the temperature being maintained at about 65. He was better able to swallow a small quantity of liquid food, and his breathing became easy. He slept tolerably well, and went on satisfactorily up to the 18th. At eleven o'clock on that night, he (Dr. Hayden) was hastily summoned to see him, and on arriving at the hospital found him on the verge of asphyxia. There was copious effusion into the bronchial tubes, and loud bronchial râles were to be heard over the chest. The pulse was rapid and feeble, the surface was cold, and the extremities livid. He raised him in bed, made him lean forward, and encouraged him to muster as much strength as he could to make a forced expiration. He did so, and about a pint of pus gushed out from the tube which had been introduced into the trachea. This gave him immediate relief. He ordered him stimulants, and found him next morning in *statû quo ante*. Two days subsequently a second unfavourable change had occurred. His face had become flushed; the pulse, although sustained at 90, was much less in volume than before. His breathing was hurried, and he was exceedingly restless. He made a close examination of the chest, but there was no evidence to be deduced from it beyond the existence of loud bronchial râles which pervaded the whole of both lungs. Stimulants were continued, and the patient was able to take some liquid nourishment. He should have added, that from the 18th of April he was able to take solid food, and to speak, by placing his finger on the tube in the trachea, and also to make several acts of inspiration through the normal passage. On the 21st it was evident that he was sinking, and he died on the 22nd.

Autopsy.—There was a total absence of organic disease of the vocal chords or epiglottis, as they surmised from the history of the case, and as he was induced to infer from the fact, that on making a close examination of the pharynx he was able to see that the base of the epiglottis presented the normal condition. The mucous membrane covering the arytenoid cartilages was somewhat thickened. On detaching the œsophagus from its connexions with the posterior surface of the cricoid, they found

a vast cavity, which had been a short time previously filled with pus, but which was now empty. This cavity extended downwards between the œsophagus and trachea to the posterior mediastinum, where it ended in a *cul de sac*. It had likewise extended upwards to the larynx, and eroded the base of the arytenoid cartilages, detaching them from their articulation with the cricoid, and forcing them forwards upon the glottis; this, no doubt, was the principal cause of dyspnea. The pus had thence descended in front of the posterior portion of the cricoid, detaching its lining mucous membrane, and had eroded and denuded the posterior surface of that cartilage. The cavity had extended laterally so as all but completely to insulate the œsophagus. On opening the œsophagus itself, he found a large ulcerated passage formed upon its anterior wall, by which the contents of the tube had passed between the œsophagus and trachea. The margins of this opening were bevelled at the expense of the mucous surface. The external surface was much less extensively ulcerated than the interior surface, clearly showing that the disease had originated on the latter. The cavity, which must have very recently been filled with pus, was quite empty; and the question then arose, what became of its contents? Was it possible to connect the evacuation of the cavity with the occurrence of threatened asphyxia and the copious expulsion of pus, for the first time in the history of the case, on the night of the 18th? After a very long search, he found an opening exceedingly small between the cavity in which the pus had been and the interior of the trachea through its posterior wall. The lining membrane of the trachea was deeply congested, as was also that of the bronchial tubes, which he had laid open in their passage through the lungs. The elastic structure of the posterior walls of the trachea was greatly hypertrophied down to its bifurcation. The heart was examined, but not with the expectation of finding any special disease of that organ, inasmuch as there had been no evidence of such during life. There was a considerable deposition of fat, and in the right auricle a large thrombus. It passed from the right auricle into the right ventricle, occupying a very considerable portion of that cavity. From the right ventricle it passed into the pulmonary artery, with the valves of which it was connected; and was traceable upwards through that vessel in the form of a cylinder occupying a small portion of its cavity, and at its bifurcation undergoing a corresponding division. There was also one in the left auricle; it passed downwards into the ventricle, but was not so large as that upon the opposite side; it was traceable from the left ventricle into the aorta as far as the origin of the arteria innominata. The history of the case was interesting in many respects. The affection had not existed for more than a month previous to the admission of the patient into hospital: this circumstance had induced the belief that the case was one of acute laryngitis, but an examination disclosed no disease of the epiglottis.

There was negative evidence as regarded disease of the great vessels and lungs; yet the man was nearly suffocated, and must have died of asphyxia in a few hours if he had not been relieved. Was the operation of tracheotomy justifiable under the circumstances? The result of it at all events was, that the man lived for nine days afterwards in comparative ease and comfort.

The disease would appear to have originated in ulceration of the œsophagus, which extended into the lax areolar tissue between that tube and the trachea, there giving rise to inflammation and the formation of abscess, which, by its extension and pressure upon the glottis, gave rise to the symptoms of asphyxia. The pus subsequently passed into the trachea, and filled the bronchial tubes, causing the second attack of dyspnea on the night of the 18th. The lungs were in that state which might at first sight be considered as the third stage of pneumonia; but they floated in water, and were simply injected with purulent matter.—*April* 23, 1864.

Fracture of the Neck of the Femur.—Professor R. W. Smith, exhibited a specimen of fracture of the neck of the thigh bone within the capsular ligament, taken from the body of a female, aged 60 years, who died last November.

In February, 1858, while an inmate of a charitable institution in Dublin, she was thrown down, and fell upon her hip. She got into bed, and made no complaint about the matter, so that the injury was not discovered for a considerable time. The foot was everted, and the limb considerably shortened. In a few months she was able to walk about. She lived for five years after the occurrence of the accident.

Upon examination of the joint after death, the injury was found to consist in a fracture of the cervix femoris within the capsular ligament, with mutual impaction of the fragments. The fracture was firmly united by bone throughout its whole extent. The welding together of the fragments was clearly marked by the consolidation of the osseous matter along the course of the lesion, and which contrasted remarkably with the reticular tissue upon either side of it. The union was not affected by maceration for six months.—*April* 23, 1864.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.[a]

TWENTY-SIXTH ANNUAL SESSION, 1863-64.

Dr. Denham, President.

Dr. Hayden *on Circumscribed Phlebitis of the Lower Extremities after Labour.*—The two following cases of circumscribed adhesive phlebitis of the lower extremities, occurring after labour—one attributable, at least in some measure, to a local cause, but both apparently traceable to a constitutional origin, or blood-crasis—possess some interest in reference to prognosis and treatment, and suggest profitable reflection in regard to the pathology of blood-coagulation in the living body, and the changes which the clot may subsequently undergo.

Case I.—Mrs. K., aged about thirty-six years, nervous and anemic, and suffering from varicose enlargement of the superficial veins of the left leg and thigh, was confined of her fifth child in March, '63; labour was at the full term, and natural; recovery progressed satisfactorily till the fifth day, when sharp febrile symptoms set in, and the patient complained of pain and tenderness in the left thigh. On examination this part was found swollen, and the internal saphena, from the knee to the groin, hard and tender, and its course indicated on the surface by a faint pink streak. Leeches were applied, followed by stupes; the limb was swathed in flannel; mercury with chalk administered in three-grain doses every third hour, till the gums became slightly affected; anodynes were necessary to procure sleep; subsequently turpentine stupes and tight bandaging were had recourse to. At the end of a week the limb had resumed its natural condition, and convalescence was established.

Case II.—Margaret G., aged twenty-one, married one year, and confined of her first child on the 5th of last January, was admitted into the Mater Misericordiæ Hospital on the 25th of that month. Labour was natural; the child, though at the full period, was unusually small, and died a fortnight after birth. The patient's health had been generally delicate, and for seven months before confinement her appetite greatly impaired. A fortnight before being admitted into hospital, and a week after confinement, she was attacked with acute pain in the left leg, which rendered her unable to put it to the ground. Œdema of the foot and leg followed in a day or two. When admitted she was anemic in a high degree; pupils dilated, even in strong light; pulse 126, sharp and irritable; skin hot and dry; and acute pain and tenderness complained of in the left leg, which rendered movement of any kind all but impossible; the left posterior saphena vein, from the ankle to its termination in

[a] These Reports are supplied by Dr. Geo. H. Kidd, Secretary to the Society.

the popliteal space, was hard, knotty, and acutely sensitive; the heart's action was quick, and its sounds normal, but there was venous murmur in the neck. On the 30th of January inflammation had extended to the lower two-thirds of the thigh; and on the 31st quite to the groin. The femoral vein now felt like a hard cylinder, and was acutely tender to the touch, the thigh much swollen, and the patient in a state of high febrile excitement.

Under the treatment employed, which consisted in leeches to the groin, warm poultices, aperients, and anodynes, pain was alleviated, and the patient obtained some repose. Mercury with chalk, and Dover's powder were administered in small doses; and on the 9th of February, the leg and foot having become greatly swollen, but not sensitive to pressure, camphorated mercurial ointment was rubbed in in the course of the veins, and the entire limb, from the toe to the groin, was tightly swathed in a flannel roller.

Diarrhea having now set in, the further use of mercury was suspended; opiate astringents were given, and, subsequently, iron and quinine in moderate doses. The patients condition underwent a marked improvement; the pulse had come down to 102, appetite and sleep much improved, and œdema had disappeared; when, on the 21st of February, the right leg and thigh were simultaneously attacked, and went through the same course in all particulars as the left. The same treatment was likewise employed, with the exception of mercury, which on this occasion was studiously avoided.

When the inflammatory symptoms had been subdued liquor potassæ was given in ten-drop doses every third hour, and a stimulating embrocation applied to the limb. On the 1st of March was free from pain; pulse ninety-six; urine alkaline; and œdema rapidly disappearing. March 10th, œdema of the limb and rigidity in the course of the veins having entirely disappeared, compound iron mixture was substituted for the alkali, porter and nutritious diet were given, and the patient was allowed to sit up. At the present time her condition is undergoing rapid improvement; she is gaining flesh and colour, and able to take moderate exercise in the ward.

The first of these cases furnishes a good example of phlebitis, dependent, at least proximately, upon previous varicose distention of the veins affected; but that this circumstance does not afford a full explanation of the attack will probably be admitted when it is borne in mind that an interval of five days had elapsed between delivery and the first manifestation of symptoms of phlebitis, during which the enlarged veins had resumed their normal dimensions, and the patient been confined to the recumbent posture, and a low diet. Varicose veins, under other circumstances, are by no means commonly the subject of inflammation; on the contrary, they appear to enjoy a certain immunity from it, as witnessed

in the application of styptics and caustics with impunity to a ruptured varicose vein.

During the last weeks of pregnancy, and for some time after parturition, the blood contains an excess of fibrin, which must predispose to vascular obstruction. Dr. Simpson says, "during the puerperal condition, the blood is more loaded with new materials, intended, some for excretion, and some for secretion, than at any other term of life, and, hence, is specially liable to diseased changes under the superaddition of any exciting or septic causes; for the uterus, during the first weeks after delivery, is becoming involved and absorbed by a kind of retrograde metamorphosis, and the effete materials resulting from its disintegration necessarily first pass into the blood before they are ultimately discharged and depurated from the system; there is an excretory action going on in its interior in the form of the lochial discharge, and the elements for the formation of a new and important secretion, the milk, are present in the circulation." In both the cases, but more markedly in the second, there were likwise anemia and feeble action of the heart, which, by weakening the *vis a tergo*, would favour stasis and coagulation of the blood, especially in the distant subcutaneous veins, which derive no aid to their circulation from muscular pressure or adjacent arterial pulsation. Thus, perhaps, may be explained the occurrence of coagulation and its consequence, inflammation, *primarily* in the saphena veins in both cases; otherwise, assuming with Dr. Lee that *post partum* phlebitis of the lower extremities, or phlegmasia dolens, originates in the uterine veins, and extends by continuity downwards, we should be at a loss to account for the immunity enjoyed by the femoral vein at the onset of the attack; and in the second case given, for a period of five days after the occurrence of inflammation in the saphena.

It will be perceived that I look upon coagulation of the blood as constituting in these cases the first step in the series of morbid changes observed, and inflammation of the containing vessels only as the second. I should be disposed to add, that inflammation of the vessels was, in both cases, the direct consequence of coagulation of the blood within them, favoured by the predisposing causes previously adverted to.

If this view be correct, it would follow that the indications for treatment are two, namely: whilst combatting the local inflammation by strictly local means, to quicken excretion through the bowels, the kidneys and the skin, and to correct the tendency to blood coagulation by administering alkalies. This latter class of remedies should be given in sufficient quantity to render the urine alkaline, and continued for some time after the appearance of improvement.

I would eschew mercury, except as a local deobstruent, in all similar cases, as being pre-eminently an impoverisher of the blood, by disintegrating, or favouring disintegration of, the red corpuscles.—16*th April*, 1864.

Dr. Foote exhibited the dried skull and skin of the head of a double-faced lamb.—21*st May*, 1864.

Dr. H. Kennedy read a paper on *Abdominal Tumours, in relation to their Diagnosis*, printed at page 1.—21*st May*, 1864.

Dr. Cronyn read a *Case of Labour with Complete Occlusion of Vagina, Successfully Treated by Incisions.*

Margaret Scott, aged twenty-seven, wife of a private soldier, 11th regiment, admitted to hospital April 11th, at 4, p.m.

From the character of the pains, I concluded she was in the second stage; and she stated her labour commenced at 11, p.m. on the 10th. On making an examination, I discovered there was complete occlusion of the vagina, about half an inch from the vulva. The pains were regular and strong; but although I believed the presentation to be a head, it was not pressing as yet. The fetal heart was distinctly audible in the right iliac region. On inquiry I learned that about a year previously she had a protracted and difficult labour at Spike Island, which was terminated instrumentally; and that she was very ill and sore for some months afterwards. Dr. Kirkpatrick saw the case with me, and shortly afterwards Dr. Denham. It was then decided that an operation must be performed to open a passage in the vagina; and as the pains had become very strong, and no impression made on the occlusion, it was evident no time should be lost. Accordingly, at 5 30, p.m., or an hour and a-half after admission, the patient was placed on a table, and brought fully under the influence of chloroform. At this time the head distended the walls of the vagina at each pain. A catheter was passed into the bladder, and left there; and Dr. Denham, with a bistoury, carefully made an opening in the septum; and, on a director, made an incision forwards and backwards, and one at either side; then dilated slightly with the finger, so that an opening somewhat larger than a crown-piece was formed. At the first incision the liquor amnii escaped in large quantities, and continued to drain away during the operation. There was very free hemorrhage from the lower part of the wound, which was with difficulty controlled by a compress of lint dipped in a solution of perchloride of iron, and pressure with the point of the finger. Four ounces of wine having been administered, the patient was removed to bed at 6 15, p.m.; the labour went on favourably, and in three and a-half hours a healthy female child was born without further interference, the placenta being expelled five minutes afterwards. She was ordered a full anodyne.

April 12th, 7, p.m., had a good night, slept well, and made water twice; the third day complained of some tenderness over the uterus, which was relieved by turpentine stupe, followed by linseed meal poultice; ordered

an aperient, which acted freely. Continued to progress without any bad symptom; the vagina was syringed twice daily, and the finger introduced to prevent union of edges of the wound.

April 20th, went to convalescent ward, and next day an erysipelatous blush appeared on the nose and face, which yielded to treatment after three or four days, the vagina continuing healthy. Meantime, although the finger was regularly passed every day, the edges of the wound gradually united, as the patient refused to submit to any treatment with the view of making a permanent cure.

On April 30th she was discharged at her own request, the vagina at this time being very much contracted, only admitting the finger. Her general health was very good.

This case being of a novel character I have thought it might be of interest to the society, as showing the advantage of early operation before the patients strength was exhaused. Dr. Sawyer has detailed the particulars of a similar case in the twelfth volume of the *Dublin Quarterly Journal*, and in which a similar operation was performed with success. I think the result of these cases proves the safety of the operation, and entitles it to a preference over the Cesarean section, which would seem to be the only alternative.—*May 21st*, 1864.

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.[a]

SESSION 1863-64.

Dr. Cummins, President.

Abscess of the Cerebellum. By F. Albert Purcell, M.D.

The pathological specimen which I bring before the society this evening is that of an abscess on the left lobe of the cerebellum, with the petrous portion of the temporal bone which is necrosed.

Ellen Callaghan, aged twelve, pale, and of strumous appearance, was admitted to Hospital on November 14th, 1863, suffering from great pain in her left ear and the back and left side of the neck.

The mother states that a purulent discharge has been running from the left ear for more than two years, and that she was during that time deaf in the same ear. She can hear with the right ear, is smart and

[a] These reports are supplied by Dr. Curtis, Secretary to the Society

intelligent, and answers any question put to her. That in October, 1862, she was attacked with scarlet fever; the purulent discharge and deafness remained unabated. That about four weeks ago she began to complain of acute pain in her left ear, for which her mother was recommended by some of her friends to try her with Turkish baths. She gave her two; after which the discharge became suppressed, followed by excruciating pain. A swelling formed down the left side of the neck, having no appearance of pointing. Some six days after the baths the child fell heavily forward on its forehead. She got no other fall or appearance of virtigo. That on the 1st of November she got a severe rigor, and vomited.

Present Symptoms.—Is crying, from the acute pain in her left ear, and is quite deaf in the same; but hears on being spoken to loudly, and answers correctly; a slight serous discharge from the ear; she is unable to bear the slightest touch about the affected ear or left side of the neck; the muscles of the neck on the left side are rigid and contracted, pulling the head over to the left side; on protruding the tongue the tip turns to the left side; no other of the muscles of the face are affected; she lies continually on her right side; a good deal of pyrexia. No fluctuation can be felt on the left side of the neck or parotid space. Pulse weak and feeble. Ordered three leeches behind the left ear, to be stuped with hot infusion of chamomile flowers, and poppy heads; to take one grain of hydrargyrum cum cretâ with half a grain of James' powder every fourth hour; chicken broth.

November 18th.—Spent the night in great pain, starting up when severe paroxysms attack her; at 2 o'clock, p.m., she got a severe rigor.

November 19th.—A second rigor to-day at 11 o'clock, a.m.

November 20th.—A rigor at 5, p.m.; when she tries to drink she makes several spasmodic gulps before she can swallow; she, notwithstanding, calls for more, as she labours under great thirst; complains of more pain in the neck, in the left and back parts; tongue protrudes still to the left.

November 21st.—Rigor at 10 o'clock, a.m.

November 22nd.—Does not complain quite so much of pain; has great thirst.

November 24th.—Slept quietly during the night; on waking in the morning she called to the nurse for a drink, after taking which she quietly lay back and died off before the nurse left her.

Autopsy.—I was kindly assisted in making the *post mortem* by Dr. O'Sullivan, house surgeon, North Infirmary.

The face and surface of body are quite blanched. A serous discharge issues from the left ear. A putrid fetor is exhaled from the body, being about ten hours after death. On raising the calvarium, the blood vessels of the brain are observed rather empty. Some adhesions between

the dura mater and brain. On freeing the cerebellum, on its left lobe and left border, corresponding with the left lateral sinus in the posterior fossa of the skull, there is the appearance of a clot of blood lying between the brain and bone. On breaking down the surrounding adhesions no pus whatever is present, but the contents are of a bloody strumous character; the bone opposite which, namely the lateral sinus, is denuded of membrane and necrosed. On removal of the brain, the probe can be passed down through the jugular foramen into an abscess in the deep portion of the neck. A tuberculous mass of matter lies on the left side of the medulla oblongata, between the dura mater and the bone. The entire petrous portion of the temporal bone is necrosed. On getting below the skull an abscess is found, lying deep on the upper cervical vertebra and under the occipital bone, internal to the mastoid process; this communicates with the matter on the side of the medulla oblongata, as the finger is easily shoved between the occipital bone and the atlas, and also extends upwards through the jugular foramen to the lateral sinus. The internal jugular vein passes down through this abscess in the neck quite pervious.

The left lobe of the cerebellum is considerably atrophied, and the abscess lies on the left and outer border. The substance of the lobe is softened. The vessels of the pia mater are congested over its surface, and entire base of the brain.

The other organs were not examined. It would have been interesting to see whether there were any further symptoms to conclude for death by pyemia.

Chronic Inflammation of the Intestinal Mucous Membrane, attended with Discharges of Lymph, or Chronic Croup of the Intestines. By John Williams, A.B., T.C.D., Licentiate of the King and Queen's College of Physicians, and of the Royal College of Surgeons in Ireland, &c., &c.

Of all the medical subjects with which we are conversant, I do not think there is one more replete with interest, still at the same time, one of which so little is known, as that peculiar form of chronic inflammation of the intestinal mucous membrane which is the subject of these remarks. Insidious in its invasion, and obscure in its symptoms, it but too frequently eludes diagnosis until it arrives at a stage when unmistakable evidences of its presence are indeed afforded; but successful treatment *then* becomes, if not an impossibility, a matter of extreme difficulty.

Mucous membranes are very prone to take on an inflammatory action, which seems to be chronic from the beginning; and in many instances the products of prolonged disease are fully established ere the patient's attention be seriously arrested. The pathological changes that occur in this structure are frequently by no means in proportion either to the

intensity of the inflammation that previously existed, or to its duration In some cases of chronic bronchitis, of many years' duration, and where the attacks were attended with severe inflammatory symptoms, the amount of turgescence and redness of the bronchial mucous membrane, revealed after death, is trifling; perhaps little more than of appreciable extent. The same is to be observed in chronic duodenitis and other intestinal inflammations. But effects the very reverse of this may also be seen, of which a familiar example is afforded in that peculiar rough or granular state of the mucous investment of the back of the pharynx and contiguous parts, the result, not, as may naturally be thought, of a diseased condition of the alimentary canal, but of mere functional derangement. The hypertrophied condition of the conjunctival villi in that scrofulous disease termed granular lids, so like the surface of a granulating ulcer, is likewise a familiar example of the insidiousness of chronic inflammation in a mucous membrane. I have often seen in this scrofulous affection, "granulations" so extensive as could only result from long-continued inflammatory action; and yet there were no symptoms of such magnitude present as would seriously arrest the attention of the patient.

The least deviation from the normal condition of the mucous membrane, in a canal of such importance as the gastro-intestinal would speedily produce, one might naturally suppose, symptoms indicative of the presence of diseased action.

Experience, however, proves that such is not the case, and that the unhealthy condition manifests itself by deranging the functions only of distant organs. But why is it so? Simply, I would say, in consequence of the intimate connexion that exists between the nerves of the alimentary canal and the cerebral, spinal, and sympathetic. In consequence of this communication, symptoms so grave as to cause much alarm are not unfrequently caused by even a temporary derangement of the digestive system. Lesions of function often occur in organs the most remote from any interference with the normal action of the stomach, and disappear when the indigestible substance has left it. But more than mere derangement of function is produced, and that not rarely, by this cause; for example, an attack of nettle-rash or other skin affection is often the penalty paid for indulgence in a shell-fish supper, or in viands that seem to exercise a peculiar influence over the stomachs of some persons. Convulsions are often caused in children by the irritation of worms in the intestinal canal. I have seen paralysis in an adult—temporary hemiplegia—produced by the presence of lumbrici in the stomach, and vanish with their ejection by vomiting. Hence it is, I would say, that the practitioner is so often in error, and drawn away from the real situation of so obscure a disease as that now under consideration.

When irritation of the intestinal mucous membrane degenerates into chronic inflammation, what before were but temporary perversions of

function in distant organs, now become persistent, and often are so well marked that the disease appears almost unmistakable, and a line of treatment pursued of which we have hereafter reason to repent.

Inflammation of the mucous membrane of the intestines not unfrequently takes on a *peculiarly modified* action, which is not, nor cannot, be discovered with absolute certainty until the stools indicate it by the presence of shreds or strings of lymph, mixed with the feces. An example of these shreds I now present for your inspection; but in the case from which these croupy membranes were taken, round strings of lymph, six or eight inches in length, resembling the *debris* of lumbrici, were often to be seen. This peculiar condition, known as "plastic inflammation" by some authors, and as "pellicular" by others, but which I think is best named chronic croup of the intestines, seems to be one and the same affection. Professor Simpson, of Edinburgh, considers it to be an "eruptive disease" similar to a chronic skin disease, and treats it as such. With this view I entirely coincide, and believe the treatment he proposes—so far as it goes—about the best; see his obstetric works, Vol. I., p. 308, to which I would direct special attention. In the *Dublin Hospital Gazette* for 1854, there are some interesting remarks by Dr. Corrigan on a case of Dr. O'Donovan's, of Belturbet.

In the *Transactions of the College of Physicians*, Vol. VI., p. 106, Dr. Powell has noticed the subject, as also have Andral, Gendrin, and Brettoneau.

Cruveilhier styles this disease, "enterite pseudo membraneuse," and we find that in 1857 it arrested the attention of the Society of Physicians in Sweden.

Abercrombie fully discusses simple inflammation of the intestinal mucous membrane in his practical little work, *On Diseases of the Stomach;* but he does not seem to recognize this peculiar inflammation, of which some of the cases mentioned by him, for example No. CXXV., evidently are well-marked instances. The difficulty of diagnosis I before spoke of, Abercrombie fully recognizes. In reference to this subject he remarks:—"Inflammatory conditions of the mucous membrane of the intestinal canal, present a subject of great interest and considerable difficulty. In the diagnosis of them, much attention is required in their *earlier* stages, because it is only at *this period* that many of them can be treated with any prospect of success; and because without very great attention they are apt to be confounded with diseases of a much less dangerous character."

The diagnosis of this *peculiar* chronic inflammation, or intestinal croup is perhaps still more difficult, for it occurs less frequently, and is consequently by no means generally recognized; while the almost exact identity between the strings of lymph passed at stool and the *debris* of worms is very apt to confound diagnosis. This occurred in the case from which

this specimen of false membrane was taken. In this individual there was ill-health for years. The stomach, the liver, and the chest, were each in turn blamed and treated for what assuredly involved them, as indicated by their lesions of function, but which did not originate in either. That rather fashionable, I was near saying protean, malady, spinal irritation, was not forgotten, and the firing iron was used. Purgatives, alteratives, and laxatives, were employed to combat the obstinate constipation which ever existed; but all proved in vain; until the administration of a strong infusion of kousso—given with a view to rid the intestines of the offending parasite, whose presence in them was very naturally suspected—revealed the real nature of the disease, by causing the discharge of large quantities of shreds and strings of lymph. For days after the "kousso" was taken, a feeling of soreness in the intestines, "as if their inner surface were scraped," was complained of, and difficulty in walking experienced, while the *smallest* dose of any mild aperient or laxative could not *since* be endured. Enemata were, in consequence, employed, as the state of the bowels was very irregular, obstinate constipation being the general rule. It was not until the real nature of this insidious and obscure disease was recognized in the manner just described—and which treatment may have proved fatal—that proper treatment was adopted, and improvement in the health manifested.

Last May, Dr. Hutton, of Dublin, told me he then had a patient—a lady—who passed shreds of false membrane every time she menstruated. She, too, was unable to take aperient medicines; "even one teaspoonful of castor oil could not be endured," from the irritation and distress it caused. Dr. Corrigan mentions a case, in the *Dublin Hospital Gazette* for 1854, in which ligamentous discharges from the bowels had taken place, so much resembling pieces of tape-worm that kousso had been administered before the patient came into hospital.

These intestinal discharges sometimes are moulds of the gut. I remember having heard of the case of an old gentleman in Dublin, some three years ago, in which after great distress a cast of a portion of the large intestine had been passed. When this was got rid of he recovered. One of Dr. O'Donovan's specimens, sent to Dr. Corrigan, was a "thin tubular cast of the small intestine, of dark greyish colour, with a greenish tinge; it was about thirteen inches in length, and when examined under water assumed the curve of a coil of the intestine." The most graphic description I have met with of this obscure but highly interesting and important affection is that by Dr. Simpson before referred to. I must, however, humbly assert that his details are *incomplete;* a few symptoms I have met with are omitted in his delineation of the disease, and one in particular, which I regard, and perhaps not incorrectly, as characteristic of this peculiar inflammatory action in the intestinal mucous membrane.

The early recognition of this disease, if the *present* state of our

knowledge of the subject render such possible, is of paramount importance, as it is only then we can effectually combat with it. In addition, remedies given at a venture are in general not merely useless, but positively hurtful; and, as in the case before referred to, in which "kousso" had been administered, perhaps injurious to the life of the patient.

The earliest symptoms of chronic inflammation of the intestinal mucous membrane, are so identical with those of ordinary dyspepsia, that they are apt to be confounded with them. Indeed, by the patient they are sure to be thought such, and as constipation is generally an attendant on the affection, almost every aperient drug is, in turn, tried and extolled. Perhaps a dinner pill, pepsin, or rennet wine, are found necessary adjuncts to a bad digester. Or it may be a blue pill at night, with the accompanying morning draught, are used to awake a torpid liver. To the occasional irregularity of the bowels always present, obstinate constipation, in general, succeeds, and it is found by the patient a matter of absolute necessity to take aperient medicines, thus increasing and fixing the disease.

The fact that, when this disease is fully established no laxative medicine, however mild, can be borne, proves incontestably that the temporary relief afforded by opening medicine is much more than counterbalanced by the permanent mischief invariably brought about by it in the condition of the intestinal mucous membrane. The inflammatory action in the intestinal mucous membrane is not long in existence before we are attracted by one of the most distressing symptoms of this very obscure and intractable affection. I allude to the *persistent feeling of constriction across the abdomen*, and likened by the patient to the sensation caused by a "*string or cord tightly tied round the waist;*" and invariably accompanying this symptom is a sensation of fulness or tympanites referred to the lower part of the abdomen, but often to the region of the cœcum alone, while, on examination, *none is found to exist.* Another symptom very characteristic of inflammatory action in the intestinal mucous membrane, is a feeling as if hot water were passing along the entire tract; but this unpleasant sensation rarely, I should say, advances to the condition of pain.

As may be expected, this obscure and peculiar inflammation of the internal investment of so important a canal soon reacts on other parts, both from continuity of surface and from sympathy. Accordingly the back of the pharynx becomes raw and granular. In some instances it presents such elevations that they may not inaptly be resembled to a true papular or tubercular eruption. Aphthous ulcers are sometimes seen on the gums and inside the cheeks, while prolapsus ani and excoriations about the anus show the extension of the disease at the lower extremity of the intestinal canal. Catarrh of the bladder sometimes occurs in a very aggravated degree. On the skin herpetic eruptions take place, and sometimes persistent patches of eczema or psoriasis are seen on the

extremities. The legs and feet are almost always of icy coldness, and numb, and the gait becomes very unsteady and tottering. A sense of tingling—known as pins and needles—is complained of in the fingers, and an inability to hold small articles, such as a writing pen, with them. The speech becomes thick and indistinct, such as takes place in paralysis. The character of the urine often changes during the course of the disease. At one time it presents a deposit of lithates, while at another it is loaded with phosphates, and the vessel is coated over with ill-conditioned tenacious mucus. It is curious to notice that, notwithstanding the serious symptoms just described, there is little manifestation, in some instances, of what is really going on. There is no sensible loss of flesh, and the appearance of the patient does not, in general, indicate the presence of disease. Persistent pallor of the countenance is, however, sometimes present, though there be little emaciation. One symptom I have noticed as constant; this is a peculiar clammy or damp state of the palms of the hands, notwithstanding the dry and harsh state of the skin. The feces do not present anything abnormal in their appearance until the disease is pretty well established. Careful observation will then remark shreds or strings of lymph, presenting different appearanees and degrees of organization, and adhering to the outer surface of the hard and blackened feces. The specimen of false membrane I now exhibit to you is but one variety of what was passed by the same patient. I have seen some, as I before mentioned, on many occasions six or eight inches in length, cord-like, and resembling closely the empty coats or skins of lumbrici.

Some of the specimens noticed by Dr. O'Donovan appeared like "bruised worms," which is the usual appearance of those intestinal discharges of lymph.

I think I am correct in saying that the morbid conditions of the mucous coat of those organs and cavities that can be seen, are in every way identical with diseases of the mucous lining of the intestines. This is prone to assume a chronic character, and experience shows us that, as in the case from which this false membrane was taken, the organic changes in the mucous investment of the bowels are not generally proportional to the distress of the patient, while mere functional derangement—as seen in some cases of simple dyspepsia—may happen to mislead the practitioner. The pustules, or aphthæ *seen* on the tongue, gums, or inside of the cheeks; the papular or *tubercular* eruption *seen* on the back of the pharynx; and many others connected with the labia and uterine organs of the female—convey an adequate idea of the *unseen* condition of the intestinal mucous membrane.

When, therefore, dyspeptic symptoms are complained of, *the sensation as if a cord were tied tightly around the abdomen experienced*, and a sense of abdominal fulness, *without* the existence of such felt; in addition, a raw and granular condition of the back of the pharynx to be seen,

accompanied with a bad taste in the mouth; tingling in the fingers; *loss of power*, with numbness and coldness of the lower extremities; an unsteady gait and fatigue felt, particularly after walking (the legs appearing as if semi-paralysed, and dragged by the patient as in a case of hysterical paralysis); thick and imperfect articulation; tinnitus aurium; a feeling of heat, or as if hot water was passing through the intestines, experienced; urine presenting lithates, but more often phosphates; frequent attacks of hiccup; great augmentation of the Schneiderian secretion; purpuric spots on the skin, or herpes, and sometimes psoriasis or eczema present: we may conclude, I think, with *absolute* certainty, that we have a chronic inflammatory condition of the intestinal mucous membrane to deal with.

In some cases there is great debility, with marasmus, but in others the general appearance of the patient is good, and is by no means indicative of disease. In such cases the appetite is so good as to be apt to mislead the practitioner. In *all* cases a most indescribable sensation or uneasiness is referred to the abdomen. This feeling is persistent, though it varies in intensity, and is often modified by food. The memory and other intellectual powers are, as may be expected, frequently impaired. The nervous system becomes quite unstrung; and the worst symptoms of aggravated dyspepsia unfold themselves. In some instances the functions of the stomach appear intact, and the general appearance, &c., so good that the distress and uneasiness, experienced and complained of by the patient, are often attributed to nervousness, by friends, and taken little notice of by the physician, whose skill is but little valued henceforth by the former. Happily those obscure and serious abdominal affections are now more generally recognized than they were, even so recently as 1854.

All uncertainty as to the real nature of this disease is removed when, perhaps, after the administration of some very active purgative or vermifuge, as in the cases before mentioned, in which kousso had been taken, a large quantity of shreds, or strings of false membrane, had been passed from the bowels; but this is not the period to deal effectually with this obscure disease. Before I proceed to make a few remarks, as to the treatment of this peculiarly modified inflammation, I would beg to draw attention to the serious morbid conditions found, after death, in the intestines, of which there had been no indication whatever during the lifetime of the patient. Look, for example, at *many* of those cases that succumb to perforating ulcer of the intestines. The peritonitis, resulting from extravasation of the contents of the bowels, is the very first symptom that draws attention to the abdominal cavity. Curling's ulcer of the duodenum—the real cause of which, I do not think, is at all recognized—"seldom occasions any very marked symptoms to indicate the nature of the mischief."

In a case, mentioned by Dr. Jameson, in which the operation for

strangulated hernia had been performed, an ulcer in the duodenum, "evidently not of recent origin," was found, the existence of which there never had been any reason to suspect.

It is plain, in my mind, that we are too prone to consider as cases of simple dyspepsia what are far more grave, and hence is one reason why it is often so difficult to remove that distressing train of symptoms common to both diseases. Be this as it may, one thing is certain, that if we do not diagnose this obscure inflammatory condition of the intestinal mucous membrane in its early stage, our treatment is almost sure to be the reverse of what it ought to be. From my experience I believe the view of this subject taken by Professor Simpson to be the correct one; for otherwise, I have no doubt, we would treat the disease in vain.

Of all remedies I would place arsenic first. The liquor-arsenicalis, known as Fowler's solution, I think the best preparation. I need scarcely say there is need of very great care in the administration of this drug. One or two drop doses should be continued for a long time. If any unpleasant symptoms arise from the accumulation of the doses, the medicine must be stopped for a time. Frictions of warm olive oil to the belly are very useful, both for the restoration of strength and the recovery of the peristaltic action of the intestines—brought about in a great measure by the friction.

As aperient medicines cannot, in most cases, be borne, lavements of tepid water must be used. Sometimes these must be made somewhat stimulative by the addition of a little soap, otherwise the upper bowels, in which the disease is often situated, are not excited to action, and the feces are, in consequence, retained, thus causing great distress. One of the most gentle methods of relieving the bowels is with a plain tallow candle suppository. Stimulants of all kinds I have found hurtful in the extreme, and therefore cannot recommend any. However, if it be thought absolutely essential to give one, I think Manzanilla sherry the best I know of. Abercrombie suggests bismuth, lime water, gentian, and logwood, if the bowels be relaxed. Dr. Corrigan, fearing stricture of the intestines from thickening of the mucous membrane, or submucous tissue, recommends the exhibition of mercury in cases of plastic inflammation.

Hydriodate of potash, too, may be given; but I believe the treatment suggested by Dr. Simpson's opinion of this intractable disease, and which experience bears out, is the only successful plan. Great care must be paid to diet, for there is always an insatiable craving for unfit food. I shall not enter into details, but, in this respect, the least irritating food—what is not likely to occasion tympanites—should be prescribed.

It is of paramount importance to attend to the state of the skin in this disease, the reason of which is obvious. Of hyosciamus, suggested by Dr. Corrigan, I must speak very highly; this medicine, by allaying the intestinal irritation, by which the obstinate constipation is generally

caused, produces an evacuation. Asafetida will be found the best remedy for the removal of tympanites. Counter-irritation to the abdomen is of much service. I would also recommend a flannel roller, eight or ten inches wide, to be worn round the abdomen; this affords support and comfortable warmth to the intestines.

Temperature, too, must not be neglected, as it seems to exercise a great influence over this disorder. Some patients bear heat well, and are much better in Summer than in Winter; others, on the contrary, find the bracing season of Winter, particularly if the air be dry, to agree best with them. Change of climate, when the patient can afford it, may be ordered. But I would not advise long sea voyages, as the want of *fresh* meat and good water may be sadly felt.

And now, in conclusion, I must again remark that I know of no disease more important or difficult to manage—and one which I trust will soon be better known than it is at present by the members of our profession—in the whole range of medical subjects, than this peculiar plastic or pellicular inflammation of the intestinal mucuous membrane, better called, I would say, chronic croup of the intestines.

Medullary Carcinoma of the Liver, partly in the Suppurative Stage; Jaundice Complete, from the Closure of the Ductus Communis Choledochus by a Cancerous Mass. By JOHN POPHAM, A.M., M.B.

James Ryan, aged sixty-five, was admitted into the Cork North Infirmary October 23rd, 1863, with jaundice. His appearance is cachectic but till some weeks ago he has enjoyed good health. He has a large hydrocele, and it was to get it tapped that he entered the hospital. The jaundice is only of some days' duration, and he can assign no cause for it. He has never been intemperate in his habits.

At present his whole body is deeply jaundiced; the face most so, being almost orange in tint; indeed the colour is so deep that, contrasted with another case of jaundice in the same ward of a greenish hue, they went by the names of "orange and green." His tongue has a central yellow fur; defecation is difficult; alvine discharges fetid and clay-coloured; nausea; lancinating pains in epigastrium, shooting to umbilicus and right side, with soreness on pressure; perspiration copious; spirits wretchedly depressed; pulse 70; urine about forty ounces, porter colour; no appearance of any enlargement of the liver, but, owing to the tension of the recti abdominis muscles, the examination is not conclusive. He was put upon dilute nitro-muriatic acid, and six leeches were applied to the epigastrium.

October 30th.—Bowels obstinately confined.

Ordered to omit the acid mixture as it disagreed, and to take pills of taraxacum, aloes, and hyoscyamus, every night.

November 7th.—Epigastric region full and tender; dulness, on percussion, below right mamma. On heating the urine to 212° Fahr., and adding hydrochloric acid, it is changed to a deep grass green.

Ordered a blister over the epigastrium, and to take taraxacum and soda, also wine and beef-tea liberally.

November 14th.—He has taken small doses of hyd. cum creta and dried soda, during the last four days, without any good effect.

Ordered to omit them, and also the taraxacum draughts, and to take five grains of the hydrochlorate of ammonia every four hours.

November 18th.—Hiccough has come on; the lancinating pains extend below the umbilicus, and are chiefly felt near the mesial line; abdomen very rigid; vomiting constant; bowels now free of themselves once daily; wine to be increased; omit the mixture.

November 19th.—A small tumour, for the first time, is felt midway between epigastrium and umbilicus; the contraction of the recti muscles is so great, that to feel it the hand must be pushed under them; epigastric pulsation; salivation, or rather pyrosis; vomiting of a darkish fluid, with a yeasty surface; the alvine discharges were carefully examined for fat, but without finding any; spirits so sunken that when spoken to he cannot refrain from tears.

Ordered to rub croton oil liniment over the tumour; opiates to relieve the pain.

November 22nd.—The tumour has become more distinct, and has extended towards the umbilicus; it is fixed, not shifting with the position of the body; decubitus, all through the case, only possible on right side; urine deep coloured as before; sp. gr. 1016, no albumen in it; it tinges blue litmus, green—and the pink, a muddy yellow.

November 27th.—The tumour is becoming larger every day, and presents an irregular surface raised above the level of the abdomen; epigastric throbbing more distinct; a full single sound, without bruit, is audible on placing the stethoscope over the tumour; pulse 84; bowels free daily; motions solid, but soft—drab-coloured and very fetid; œdema of the under surface of the thighs and calves, but none of feet; abdomen flat; vomiting and hiccough; exhaustion intense; flatulence distressing.

November 30th.—He continued to sink gradually, and died during the night.

The necroscopic examination was made, in my presence, by Dr. O'Sullivan, house surgeon to the hospital; the abdomen only could be examined. The following are his notes of the appearances, which correspond with my own:—

"Upon opening the abdominal cavity the lower edge of the liver is observed to extend about three inches below the lower border of the last rib. The stomach is pushed over to the left side.

"The liver is enlarged, myristicated over its surface, and embedded in

it are found several round bodies, of a greyish yellow colour, having the consistence of soft wax, and varying from the size of a pea to that of a plum. Towards the extremity of the left lobe one of these cancerous-looking masses is found in a softened, broken down condition, as if suppuration had taken place; and some of the larger ones appear to be in the incipient stage of softening; near the edge lymph appears deposited in two or three places.

"The gall-bladder is found distended with greenish bile, and projects to a considerable extent beyond the free edge of the liver. The hepatic duct, the cystic, and the ductus communis are all found filled with bile.

"Upon introducing a probe into the ductus communis choledochus it is found completely obstructed, and does not pass beyond the head of the pancreas, where it is obliterated. The opening common to the pancreatic and ductus communis cannot be found in the duodenum after the most careful search.

"The stomach contains much grumous fluid, very dark; the mucous membrane is very much congested and inflamed; there may be observed two or three black patches of ecchymosis, slightly elevated. The coats of the stomach are tinged of a yellow colour, as are the neighbouring organs.

"The duodenum is found inflamed, and pressed upon by the pancreas, to which it is morbidly adherent—pressed upon to such an extent as apparently to prevent the passage of the food.

"The pancreas, particularly the head, appears a mass of cancer, soft and somewhat of the appearance of the deposit in the liver.

"The aorta and inferior cava, in this situation, with their branches, are surrounded by a large cancerous mass, engaging the mesentery and mesenteric glands.

"The kidneys are nodulated on their surface, and when cut into present the appearance of fatty degeneration.

"The spleen is of natural size, but friable."

To the preceding succinct description by Dr. O'Sullivan I would merely add that there was an absence of ascites, and that the disseminated masses occupied chiefly the convex surface of the right lobe of the liver; also, that diseased lymphatic glands formed the chief bulk of the tumour which had been felt during life; the head of the pancreas being impacted in a cancerous mass nearly equal in bulk to the head of a fetus.

Remarks.—At an early period of the case its malignant character was suspected, and was rendered too certain by the failure of the remedies ordinarily successful in cases of chronic hepatitis. Assuming the case to be one of organic lesion, and supposing, from the constant flow of watery fluid, that the pancreas was involved, we looked for the appearance of fat in the fecal discharges; which Bright has given as a chief sign of pancreatic cancer, but we could not detect any. It is a matter of speculation

to inquire what was the *point de depart* of the disease. We find in the abdominal cavity three extensive carcinomatous complications, viz.: the pancreas, the liver, and the mesenteric glands; the nodulated appearance of the kidney made it probable that this viscus participated in the cancerous cachexia. Now, which of the above organs is to be regarded as the originative source of the disease? If we accept the testimony of Rokitansky, carcinoma of the pancreas is rarely primary, and the seat of its cancerous degeneration is mostly confined to its duodenal end, and found connected with like disorganization of the neighbouring viscera—such as scirrhus of the pylorus or of the lymphatic glands. On the other hand, both the liver and the lymphatic glands can *initiate* cancer as well as receive it consecutively. The history of the above case seems to me to favour the opinion that the cancer of the liver was subsequent in point of time; the sharp darting pains, central in position, having preceded the appearance of jaundice, which the autopsy showed was due to the pressure of the cancerous mass upon the bile duct. On this supposition the order would be—first, the glands, then the pancreas, and lastly, the liver. Professor Bennett, however, considers that in such cases the liver is the primary organ, and the lymphatic glands are only affected secondarily.

Another point of interest is *the rapidity of growth* in the tumour. It was not detected, though sought for, till about eleven days before death, in consequence of the tension of the abdominal muscles; but its growth from that time was very rapid; and the muscles, towards the close, ceased to offer resistance. Cancer, in some constitutions, seems to partake of the remarkable vegetative power of cryptogamous plants. In such extensive examples of the disease as the above the whole mass of the blood is tainted, and the cancerous matter is, most probably, deposited from the blood in the organs according to their affinity for it, and not, as Andral supposes, a transformation of tissue.

On the Use of Arsenic. By the President, Dr. Cummins.

There are few medicines the strikingly beneficial effects of which are more obvious than arsenic.

An inveterate skin disease, which had, perhaps, for years tormented its victim, placing him almost as far beyond the pale of society as did the leprosy of old, fades away imperceptibly under its use, and enables the quondam sufferer to pay grateful homage to the healing art; or the worn-out subject of neuralgia, habituated to sleepless nights, and tortured restlessness, casts off the chain that had bound him to suffering, and thankfully acknowledges that to arsenic he is indebted for repose and comfort. Or some intractable intermittent, which quinine had failed to remove, is speedily banished from the system by the same means; or the spasmodic contortions, which render the victim of chorea a caricature of

humanity, acknowledge the power of this remarkable therapeutic agent, which restores the free and voluntary play of nerve and muscle. Nay more—in these, and many other diseases, not only is the local malady removed, but the tonic power of the medicine is sensibly felt in every part of the system. Would that we could say—all these triumphs of our art are achieved without danger!

Arsenic, as a medicine, is generally used in small and frequently repeated doses, continued often for a very considerable period. We are told by some authorities that it is not cumulative; and as this opinion was gravely maintained by a practitioner of considerable experience at a coroner's inquest, to which I shall presently allude, I think it well to occupy a little of the society's time with the discussion of a question of such *vital importance* to all who undertake to administer arsenic in disease.

Dr. MacSwiney stated, before the Surgical Society of Ireland, (see *Dublin Medical Press*, May 6th, 1863) that in a celebrated trial, which took place in France, there was a great discrepancy of opinion as to whether arsenic is cumulative or not—Danger, Flanden, Orfila, and other eminent toxicologists, maintaining that it is. But, instead of occupying your time with authorities on the subject, I shall discuss it on its own merits. And first—what do we mean by the cumulative action of medicines? Dr. Fleming, in the following passage (*Edinburgh Medical Journal*) states it to be "the gradual increase of physiological action from the successive exhibition of equal doses. When a second dose is given, before the effects of the first have passed away, we add to what remains of the action of the first the full operation of the second, and so on with the third and subsequent doses, until finally the sum of effects exceeds the limits of medicinal, and passes into those of poisonous action." Now I believe all authorities admit that when arsenic is continued in small doses for a time, it may be weeks or months, certain physiological effects are produced; and, according to Dr. Fleming's definition of cumulative action, this admitted fact ought sufficiently to establish its cumulative power; for if the first dose does not produce the specific effects, and subsequent ones do, it follows that one dose must overtake the other within the system; and further, if physiological effects can be thus produced, it is only a question of time as to whether toxic effects may not follow.

However freely a medicine is eliminated from the system, a certain time is necessary for its elimination; and if, previous to that given time, a second dose is exhibited, there must be cumulation. Well-known facts also prove that free elimination does not prevent cumulation. For instance, few medicines run off more freely by skin, stomach, and bowels than tartar emetic, and yet the system learns soon to tolerate its presence, and allow large quantities to remain within it—witness the late cases of criminal poisoning with that substance—so we may, I think, admit that

the freedom with which arsenic is eliminated is no proof that it cannot accumulate.

The fact which stands out most prominently in opposition to the hypothesis that arsenic is cumulative is the alleged habitual indulgence in its use, even in daily quantities of from two to four grains, by the natives of Bohemia, Silesia, and some parts of the Austrian Empire, who, it is said, take it to invigorate the system, to improve the power of the respiratory organs, and to increase their powers of endurance (see *Dublin Medical Press—ante cit.*); but while we admit that these effects may be produced by it, and may be sufficiently appreciable to induce the ignorant to continue its use, just as the stimulating effects of alcohol lure on many a victim to destruction; yet, in the absence of the fullest information, this cannot be used as an argument against what reasoning would lead us to expect, and what well ascertained and well authenticated facts establish.

The facts I have yet to mention, are some of them quoted from various sources, some are my own. They demonstrate two things—1st, that arsenic is a slow poison; and 2nd, that it is a cumulative one; the difference between a slow and a cumulative poison being, that one, when given in continued small doses, produces effects different from the ordinary poisonous action of the agent; while the other, when similarly administered, suddenly causes the symptoms of a full dose at some uncertain interval of time.

In the *Dublin Medical Press* (May 6th, 1863) we find a most interesting case, recorded by Dr. John Barry, among the *Surgical Society's Transactions*, of a lady who, during a course of arsenic, under the observation of a London practitioner of great experience in the use of this medicine, was suddenly attacked with paralysis of both hands and feet. Ten years of protracted suffering and broken health followed, and then small black masses appeared imbedded in the skin, around an ulcer on the leg; these, on being analyzed, were found to consist of arsenic, and the hitherto ineffectual struggle of her constitution with the poison thus ended in the triumph of the former.

Several gentlemen took part in the discussion which followed the reading of this case; and Dr. Macnamara related a case in which arsenic, having hardly affected the eyelids or fauces, produced such intense diarrhea that death was only warded off by powerful stimulants. Dr. H. Kennedy also related a case where a single application of arsenic produced a very severe form of paralysis of both hands and feet.

Dr. Hastings, of Worcester (*Provincial Medical Journal*, August, 1848), relates the history of a patient who, after taking from three to five drops of Fowler's solution, thrice a-day for some weeks, suffered from great weakness, and partial paralysis of both upper and lower extremeties, with burning pains in feet, &c. Dr. Turnstile, of Bath, followed it up by the case of a young woman who took three minims of liquor arsenicalis for

seven days, and became thoroughly prostrate, with peculiar glassiness of the conjunctiva; and another where the same medicine, taken by a young man, produced lassitude and incapacity for active exertion, reproduced by any slight cold. Dr. Erichsen (*Medical Gazette*, May, 1843) mentions the case of a young lady, of highly nervous temperament, but otherwise perfectly healthy, and without hereditary predisposition, who took Fowler's solution, and, as a consequence, suffered from extensive derangement of stomach, followed by a violent neuralgic attack, and, at a subsequent period, a distressing train of hysterical symptoms, which terminated in a state of what might be considered hopeless dementia.

Dr. Burne has reported the case of a young lady who took, in divided doses, in three days, one fifth of a grain of arsenic; symptoms of inflammation of the stomach, and alarming symptoms of a nervous character appeared (*Taylor's Medical Jurisprudence*).

Last Spring I was, myself, consulted by a gentleman who gave the following history of his case:—He had suffered for a long time from a a scaly eruption of his ear, and had in vain used various applications, and taken much medicine—when a book, written by a London surgeon, strongly recommending the use of arsenic in skin disease, fell in his way. Its perusal so interested him that he corresponded with the author, and was ordered arsenic. This he continued, in doses of from three to six drops of Fowler's solution, three times a-day for two months, when the disease rapidly yielded to the treatment; and as there was tingling itching, and partial desquamation of the hands and feet, the dose was reduced, and continued thus for another month, when I was sent for in consequence of great irritation of the lower extremities, and symptoms of inflammation of the stomach having set in; and it was only by great care and active treatment that he was restored to comparative health. I met him this day (April 13th) and he mentioned that he has never since felt as well, or as equal to active exertion as before. These, and other cases that might be brought forward, prove that arsenic is a slow poison; that, like lead, mercury, silver, alcohol, &c., it remains long in the system, differing altogether from such poisons as tobacco and opium, which, when continued for a long time, produce injurious effects, due rather to a chronic influence upon the nutrition of the body, than to gradual accumulation within it. The following case is somewhat different from those I have related, as, instead of producing a slow poisoning, arsenic, in divided doses, continued for months, without, as far as we are aware, any but beneficial effects, suddenly, and without any known cause, exhibited the appalling train of symptoms which characterize the full toxic effects of the mineral; it is a case paralleled only by the action of strychnia, digitaline, and such deadly alkaloids, which, whether from insolubility, impaired digestion, or through accumulation, after being taken for some time with impunity, occasionally terminate life in a few hours.

At 4, a.m., on the morning of the first of April, I was called to see a man, aged forty, suffering from vomiting and diarrhea. His friends informed me that he had been in good health the previous day, had taken nothing to disagree with him, and had returned home at the usual hour to supper, but felt disinclined to partake of it. At 7, p.m., vomiting commenced, and shortly after diarrhea, both continuing up to the time of my visit. He was then lying on his back, extremely prostrate, cold, pulseless, and thirsty; he had taken punch and brandy, which had failed to stimulate him; he was perfectly conscious, and answered my questions in a distinct and natural voice; the pupils were dilated; the surface of body was cold and dark coloured; hands blue and corrugated; countenance pinched and anxious; there was great tenderness of epigastrium and abdomen generally; tongue was white; the breath was not cold, and there were no cramps. Vomiting and diarrhea did not recur during my visit, and all the discharges had been thrown out.

I prescribed medicinal and alcoholic stimulants freely, and opium cautiously. External warmth was applied, and such other ordinary treatment as seemed indicated. I saw him again at 10, a.m. He was then in much the same state as before, except that the body and extremeties had regained their warmth, and that the respiration was short and hurried.

Diarrhea and vomiting had returned during my absence, and the discharges had been kept for me; those from the stomach were of a reddish brown, and the stools consisted of a reddish serum. He died shortly after.

I was not aware that this poor man had been taking medicine of any kind, as it had not been mentioned to me. However I thought the case suspicious, as although death might have been caused by perforation of some internal viscus, or by cholera, there was a sufficient amount of dissimilarity from the symptoms and course of such affections, as well as so close a resemblance to those of irritant poisoning, to make an inquest necessary. It was not until afterwards that I ascertained the true history of the case, which is as follows:—The patient had long suffered from an intractable skin disease, affecting one of his legs; and his master, a non-practising physician, who had read Mr. Hunt's book, and became deeply imbued with his views as to the value of arsenic, had, with the concurrence of another medical gentleman, ordered him about three minims of Fowler's solution, three times a-day, after meals, cautioning him immediately to report any affection of the conjunctiva, or other physiological effect of arsenic.

The poor man derived such benefit locally and generally from the medicine that he became deeply enamoured of it, continuing to take it steadily for about ten or twelve months. We all know the recklessness and hardihood of the Irish character, and can easily believe that slight discom-

fort about the eye, throat, and face, such as arsenic produces, might have easily existed unnoticed, or uncomplained of, and thus the medicine been permitted to accumulate until the symptoms of poisoning, by a large dose, were suddenly manifested.[a] I have no doubt whatever that the patient was thus poisoned; and I gave evidence to that effect at the inquest. Unfortunately, however, there was no *post mortem* examination of the body to bear me out; as the jurors, who were principally uneducated labouring men, stood in awe of ordering their friend "to be cut up in pieces like a felon, and sent to a chemist to be analyzed," as a medical gentleman, who was present, told them would have to be done if there was an examination. I was the only material witness; and I testified as above, that, in my opinion, deceased died from arsenical poisoning. Nevertheless seven of the jurors gave a verdict in direct opposition to the evidence. So much for inquests! The verdict, however, would probably have been different had the case been a criminal one; but under the circumstances there was no great need for close investigation. The lesson it teaches, however, is too valuable to be thrown away.

I have read Mr. Hunt's book, as well as several of his papers which, from time to time, have appeared in the medical journals, and I think his mode of exhibiting arsenic most judicious, and far less dangerous than the old method of prescribing gradually increasing doses. It is the one I always adopt myself, and I have never seen disagreeable effects follow. During a course of arsenic the patient should be frequently seen, and closely examined. The peculiar silvery whiteness of the tongue, described by Dr. Begbie (*Ed. Medical Journal*), is exceedingly characteristic of the first constitutional influence of the medicine, and is seldom absent; it is soon followed by swelling of the face, redness and itching of the conjunctiva and eyelids, dryness of the fauces, and, occasionally, by the horizontal red line within the lower lid, described by Mr. Hunt. The moment any one of these symptoms is recognized the dose of arsenic must be reduced, and *under no circumstances* should it be continued for many consecutive months. as it would seem from the cases I have mentioned, and others, that after a time the excretory organs become habituated to its presence, and are insusceptible of the amount of irritation which the constant excretion of an abnormal product demands. In this particular arsenic seems allied, in its physiological action, to nitrate of silver, which, we know, will never accumulate under the skin in quantity sufficient to discolour it, if its administration is suspended from time to time.

With all the precautions I have mentioned, however, the use of arsenic is occasionally attended with some risk, for not only is it, at times, liable

[a] Since the above was written I have heard from the man's master that none of the physiological effects of arsenic could have occurred, as he examined him constantly.

to exacerbations, remissions, and intermissions in its action (Dr. A. Thompson), but certain constitutions will not tolerate the smallest dose with impunity. Such idiosyncracies, of course, are *very exceptional*, and might be urged with equal justice against mercury, which, in almost infinitesimal quantity, sometimes salivates a patient; it is well, however, to bear them in mind, and increase the caution which it behoves us to exercise in all operations where human life is at stake.

Some Curious Facts Relative to the Preservation of Leeches. By JOHN WILLIAMS.

Although well aware how tenacious of life leeches are, still I was not prepared for the following fact regarding them. When we sailed from Australia, in the month of February, 1862, in the "Great Britain" steamship, about three dozen Australian leeches were put into a wide-mouthed green glass bottle, and hung in the surgery of that ship. The water supplied to them was formed of the *condensed steam* from the boilers. Sea water, as every one must know, is pumped from the sea into the boilers; and in the "Great Britain," I presume in other steam-ships also, a condensing apparatus condenses the steam, which otherwise would escape, and converts it into fresh water, which is in general use on board. Although this water is not so delicious as "sparkling spring," still I drank freely of it, as I knew it was pretty pure. The leeches occasionally seemed uneasy, evidently from the lack of oxygen in the water, and "mounted aloft" above the surface of the water in the bottle, until, I should say, it had absorbed atmospheric air. The now proved universality of the germs of life fully accounted for the source of their nutriment in the *condensed steam* of sea water, else on what could they subsist? Notwithstanding the unfavourable circumstances, both as to water, great and sudden changes of climate, from the ice of Cape Horn to the heat of the Tropics, &c., which the leeches had to endure, still but *two* leeches died during the entire voyage from Australia to England.

The Australian leech, which abounds in almost every river and lagoon in that country, differs but little from that in ordinary use with us. The olive streaks of the former are of a much lighter shade. I do not remember to have seen any maculated. A medical gentleman from that country told me they are found most excellent for use. They are taken by throwing a fresh sheep skin into a lagoon, to which they closely stick until it is drawn out, when they are picked off.

Last year I kept leeches in common distilled water for a long time, and found they lived very well in it; I would, however, strongly recommend some sub-aquatic weed to be put into the water with leeches; as, in my experience, and of others who have tried it, it will be found to lessen the mortality extremely; while, in addition, it obviates the necessity

for changing the water so often. Dr. Normandy has conferred a great benefit on the marine service, by his discovery of a comparatively easy method of distilling fresh water from salt, and so charging it with oxygen as to make it excellent for use

His apparatus for the distillation and creation of fresh water from the sea is very portable, not very expensive, and is now, I am glad to say, in very general use.

As we are on the subject of Australia, I may add that the oil of the Dugong whale is much esteemed there, and would come into extensive use, as a substitute for cod-liver oil, but for its high price; indeed many consider the former to be more valuable. The Dugong is found in almost every bay along the eastern coast of that country. The aborigines about Moreton Bay, in Queensland, eagerly pursue this fish. The oil is of a pale greenish colour, and not disagreeable to taste. The blacks express it for sale, and then roast the carcass and devour it. The heart of the Dugong is remarkable for being so deeply cleft from apex to base—like that of early fetal life—as to give the idea of two separate organs.

We brought home a few bottles of Dugong oil in 1862. Its price then was about thirty shillings the quart bottle.

Case of Diphtheria. By Dr. Luther, Clashmore, Co. Waterford.

On the 17th of February I was called to see Peter Walsh, a labourer of intemperate habits, who had been suffering one day from what I fancied to be tonsilitis. Previous to the attack he had been sober for a fortnight, with the exception of one day, when he drank hard at a funeral. Finding him feverish, with coated tongue, &c., I prescribed an antimonial emetic immediately, a saline aperient to be taken in the morning, and a stimulating liniment externally. There was no improvement the following day; but, believing the case an ordinary inflammation that would result in abscess, I did not think it necessary to visit him until three days after, when I was shocked to find him almost pulseless, with purulent secretion flowing from the nostrils. I ascertained that he had had maniacal delirium, and that during the paroxysms he had been uncontrollable, and had wandered about the fields. He was now taciturn, and so feeble that I considered it necessary to administer stimulants freely.

My attention was now called to a sister of this man, a young married woman, who had been complaining of sore throat for the last three days. She was not feverish, but the tonsils and uvula were œdematous; and the pharynx and uvula were nearly covered with a greyish yellow membrane; tongue very foul. I at once saw that I had cases of diphtheria to deal with (the first I had seen in an adult), and that Walsh's was a very aggravated form of the disease. I directed the female patient to use a saturated tannic gargle, and to take stimulants frequently. I also

prescribed gr. viii. of calomel at bed time, followed by a seidlitz in the morning, and a draught containing m. xx. of tincture of the muriate of iron three times a-day.

Next day I found Walsh rather improved, although the attendants had been unable to induce him to take more than one glass of punch; he had slept some hours during the night, and had awoke rational; but soon after began to rave again, as if he had delirium tremens. I now prescribed sixty minims of laudanum, with egg flip and whiskey. After this he slept all night, and was quite rational, and appeared to be rallying rapidly when I visited him next day. I ordered him strong broth and muriated tincture of iron. Improvement progressed rapidly from this date; and in four or five days he was able to get up, although continuing very weak for some time. The sister only remained in bed for two days, as she had to nurse her brother and three children, all of whom took the disease. One of the latter was very ill and feverish for ten days; a tumour formed in the parotid space, but receded without suppurating. The other two were more slightly affected; but all three suffered subsequently from paraplegia. The two adults, also, had incomplete paralysis of the lower limbs. I should have mentioned that the false membrane remained on Mrs. Keeffe's throat for ten days, even after the sickness had passed away.

Last year I saw a case of diphtheria in a healthy child, five years old, followed by paralysis of both hands and feet; the former recovering, however, in a week, and the latter not for six weeks after convalescence from the original disease. She then got croup, and bore antimonial treatment for that affection, as well as for two or three relapses of it which occurred, very well. Many cases of diphtheritic croup also came under my observation, of an eminently contagious character, last year.

About a fortnight after I attended Walsh I saw an old woman of seventy, named Keefe, dying in the next house, of phlegmonoid erysipelas of the throat. She had been confined to bed for a fortnight, complaining of pain in the side; but it was only five days before I saw her dying that pain commenced in a loose tooth, followed by swelling, and an immense effusion of lymph into the submaxillary cellular tissue, causing a hard brawny tumour; her tongue was black, swollen, and protruding from the mouth, preventing any examination of the interior, and presentiug a fearful spectacle. She had been raving, but was speechless when I saw her; and soon after she died suffocated. Though strictly a case of phlegmonoid erysipelas, her proximity to the house of Walsh made me consider it a variety of diphtheria.

Case of Catalepto-mania. By F. A. Purcell, M.D.

Mary C., aged seventeen, of strumous constitution, has perfect anchylosis of the knee, the result of successful treatment for disease of that joint. She has been under my notice for about two years.

On Christmas eve last I was called to see her, which I did at six o'clock in the evening. She was then sitting at a table, with her head resting on a pillow; her head was hot, but no headache; tongue slightly furred; pulse quick. She has not had her menses for the last three periods; on last Saturday they came on profusely, and on Sunday morning suddenly stopped; bowels costive. She answers all my questions. I ordered her some aloes and assafetida pills.

At eleven o'clock that night I was told that she was dying. When I arrived I found her stretched at full length on the ground on her back, quite rigid; her eyes open, with a vacant stare. They told me that she had worked her arms and body as one in a fit; she was held down for fear she might injure herself; her pulse was strong and quick; pupils sensitive, more or less contracted. I applied smelling salts to her nostrils, which had no effect.

I had her undressed and put to bed; she made no resistance. I then filled her mouth with table salt; this, when it began to dissolve, dribbled out of the side of her mouth; her jaws she kept firmly clenched; she remained perfectly motionless; eyes fixed. I ordered a turpentine and assafetida enema, and cautioned her mother to watch her.

December 25th.—She lies this morning as I left her last night; pulse 142; eyes open and fixed; conjunctiva greatly suffused; she worked her arms and body several times during the night; has taken only a little tea for the past week; she appeared to notice no question made to her. I turned all her friends out of the room; I felt the abdomen, and began to speak to her, when she rolled away from me to the off side of the bed, and she said, "that God and the doctor alone knew what was the matter." I then asked her why she was pretending to be ill in this way, as she was making all uneasy and anxious about her. She answered, "that she wanted to be dead, and would be thrown out as such to-night; she did not want to live, she was ruined." She answered no further inquiries; and when I re-admitted her friends she returned to the same position as before. The priest saw her afterwards, but he could not get a word from her.

December 25th—evening.—She has remained in the same state since morning.

December 26th.—Limbs and body quite rigid; pulse quick; eyes have remained constantly open and fixed, greatly suffused; she does not move her lids; jaws tightly locked. I again turned all out of the room, and told her that it was wrong for her to go on in this way; she nodded her head, and the tears began to flow; the eyes and lids she does not move.

Thinking that change of place and people would revive her, I advised removal to the Mercy Hospital; having told her so, she only bobbed her head. Six strong women had to take her to hospital between them, as she made every opposition. On entering the hospital she said, "Oh

you have done it badly; you brought me to where I got it." When I saw her next in the hospital, some few hours after her admittance, she lay rigid on the bed; eyes fixed and suffused; pulse quick; jaws clenched. She would swallow nothing. I had three leeches applied to each temple.

Ordered twenty minims of laudanum every third hour.

December 27th.—She screamed loudly, and worked much several times during the night; pulse 140; muscles contracted, and she lies much as she was yesterday; can not get her to swallow anything; her jaws are locked. She has lost a tooth in the front of her mouth, through which space fluids and medicines are tried to be passed, but all flow out again—nothing seems to go back. Dr. O'Connor now saw her, and he states that he has in private a similar case. A blister to the pole, and sinapism to the feet.

To have a turpentine enema immediately, and to take an ounce of assafetida mixture every second hour.

December 27th, 5 o'clock, p.m.—Pulse quick and weak; seen by Drs. O'Connor and Townsend; to have two glasses of wine during the night, and beef-tea.

December 28th.—During the night-time she had four attacks of wild delirious screaming; she then drank some drinks; and about four o'clock in the morning she took the sitting posture, and keeps up a continual movement from side to side; she seems to recognize persons, but does not speak; fondles everything with her hands, and appears frightened; the tongue is protruding, the teeth firmly clenched on it, red, and congested; pulse weak; the blister rose well.

To have an enema immediately, containing a drachm of tincture of opium; beef-tea *ad libitum*.

December 29th.—Pulse somewhat stronger; jaws tightly closed; tongue protruding; vacant expression; constantly picking bed clothes.

Ordered tincture of opium, two scruples; tartar emetic, two grains to six ounces of water. A tablespoonful to be taken every fourth hour.

Evening, 8 o'clock.—Pulse improved; has spoken a little, and points to her throat as to where all her disease is concentrated; jaws still kept tight; she cannot swallow; she keeps throwing her arms about, and puts away my hand when laid on her; conjunctivæ not so suffused.

To have the jaws stuped with hot flannels.

December 30th.—Has been chattering during the night to the attendants, and took some tea and toast for breakfast; she still moves her hands about; and when asked to put out her tongue, states she cannot open her mouth. The muscles of her chest and arms have been all along rigid; but since she slept, a little of which she has had, the muscles relax; pulse quick, but stronger; she now gets out of bed to micturate.

Had her removed from the private ward to the general ward.

December 31st.—Pulse weak; recognizes every one about her, but chatters, and demands oranges in particular from every one who comes near her; will not put out her tongue, and swears that she is dead over 100 years; she spues saliva from the mouth both when asleep and awake; quite maniacal. From this date she got gradually better, and was dismissed, cured, from hospital January 17th, 1864. I have since seen her, and she is at work with a dressmaker, apparently in perfect use of her brains and fingers.

Primary Syphilis. By Thomas Blatherwick, M.R.C.S.E., Staff Surgeon 20th Depôt Battalion.—In submitting to the Society some statistics connected with cases of primary syphilis which have occurred in the Hospital of the 20th Depôt Batalion during the past two years, I must premise that it is not done with an idea that either the limited field which is thus gleaned from, or the abilities of the observer, can of themselves throw much new light on a subject of so much general professional interest—but with the hope that the leading practical points in connexion with the origin, progress, and treatment of this formidable disease, on which such a diversity of opinion has, at times, prevailed in the profession, may this evening be brought under discussion to our mutual advantage. And when we consider syphilis, either in its pathological or social aspect, in its baneful influence on the constitution, in the remote agency of its terrible poison, destroying not only the health and happiness of its immediate victim, but even of those who are dear to him, and passing by inheritance to a succeeding generation, it must be conceded that any fresh efforts we can make in its study, either by clinical observation or practical discussion, are most worthy of our attention.

I find that there have been seventy-one cases of primary syphilis under care in the Depôt Battalion Hospital, arranged as follows.—(*Vide* table I).

Of a total of 119 cases taken promiscuously from the books, without reference to the nature of the chancre, I find the following results with reference to mercurial treatment and secondary disease.—(*Vide* table).

I submit the following comparative statistics with regard to non-mercurial treatment and secondary disease.—(*Vide* table).

There is perhaps no disease around which there has been cast a greater shade of uncertainty as to its source and origin, or a greater variety of opinion entertained as to its progress and treatment, than syphilis. What a perplexity of antagonistic authorities meet the student of this disease; and where may the theorist take his stand and not find himself supported by the recorded opinions of the eminent of our profession? But, as the practice of individuals must be regulated by definite views, derived in part from the experience of their predecessors, and in part from their own observations, I would say that mine have led me to

believe that there are two specific forms of primary chancre—the indurated or Hunterian, and the soft or superficial, each capable of, and having a tendency to, reproduce a chancre of like nature; and I lean to this view because I have found that soldiers consorting with the same female, at or about the same time, have presented the same form of chancre, though they differed in temperament, habit, and other constitutional points.

I look on the Hunterian chancre as an intensified form of the disease, which may be produced by excessive and promiscuous intercourse, aggravated by dirt and debauchery; and when once existing it is reproduced by contact. In the army we generally meet it in large towns and garrison sea-ports, where the above conditions generally exist. As a rule, it is likely to syphilise the system, evidenced by the spontaneous induration of the chancre, and general inguinal enlargement, the glands of the groin being separately indurated, and not passing on to suppuration. Soft or superficial chancre, produced under less unfavourable circumstances than the Hunterian, is also reproduced by contact, and is exceedingly variable in its nature, under influences of an incidental or constitutional character, assuming every form from a simple abrasion of the mucous membrane to a formidable phagedenic sore; as a rule, not producing syphilisation of the system, and not extending beyond the neighbouring lymphatic gland which ordinarily softens down and suppurates. It may, therefore, be regarded as a local disease.

Neither Hunterian nor superficial chancre must necessarily produce constitutional syphilis if destroyed in a given time, or before the specific character of the disease is developed. The diagnosis of these two forms of disease is by no means as easy as would be at first imagined, as the superficial sore soon assumes a certain amount of thickening and induration under local irritation from dirt and neglect, or perhaps an attempt at treatment on the part of the patient.

It is true that certain leading characteristics of the Hunterian chancre are laid down by authors. The cup-like excavation, the indurated periphery and base not mingling with surrounding tissues, but imparting a sensation to the touch as of a piece of loose cartilage under the skin. I have very seldom found these genuine characteristics fully and completely developed. Questions of great practical importance are involved in this issue as to the treatment to be adopted, whether the disease is to be regarded as local or constitutional, and treated with or without mercury.

I know of no other reference, under these circumstances, than to the groin, where we may hope to find the bubo characteristic either of local or constitutional disease.

Phagedenic chancre appears to be allied to the superficial form, and its gradations in intensity from an ordinary spreading ulcer to a deep

destruction of parts are almost insensible. Constitutional causes appear to favour its development, and, *a priori*, it may be expected to have a tendency to reproduction. The period of development of the primary sore depends upon such incidental circumstances as the abrasion of the mucous membrane, or conversely on that membrane being thick, hard, and unsusceptible; from which cause the virus may for some time be in contact with it before the ulceration is completed. On the question of the period at which the syphilitic ulcer is developed after contagion, I am sorry that I cannot throw much light; the habits of soldiers have not enabled them to give many satisfactory answers to my questions on this point.

The treatment of primary sores usually adopted has been, first to clear out the bowels by saline purgatives; to reduce local inflammation by poultices, fomentations, rest, and low diet; and to endeavour to convert the specific into a simple ulcer by the application of nitrate of silver or nitric acid. There are other remedies adapted to this purpose, such as the acid nitrates of silver and mercury, the potassa c cacle, &c.; of which I have had no experience. I believe that nitric acid is a most effectual agent, but I am not inclined to admit that the solid nitrate of silver, when early and thoroughly applied, is much inferior to it in its efficiency. An important question is the period to which the success of this abortive treatment of syphilis is in all probability limited. Ricord, in the case of the Hunterian chancre, places it at the first five days after exposure to contagion, basing his argument on the fact that the third day is the usual period at which that chancre assumes its peculiar indurated character, and evidences the initiation of the first stage of constitutional syphilis. The cases which have presented themselves for treatment in my hospital have, on the average, arrived at the third day of the existence of the chancre, and have thus been probably within the required period. The punishment which awaits a soldier for concealing his disease acts most favourably in affording opportunities for a radical cure. In cases of the ordinary superficial chancre the treatment by caustic may be adopted with expectation of success at a much later period than in those of the indurated chancre. I have thus treated, with success, eleven cases, from the fifth to the tenth day. After the successful application of caustic has converted the chancre into a simple ulcer but little local application has been used, beyond water dressing or weak astringent lotions; but in cases where the sore manifests no disposition to heal, its surface being smooth, with a brown parchment-like slough, and its edges hard and elevated, the patient has been brought under the influence of mercury, with good results. In those cases where the sore has shown a tendency to extend itself by an irregular creeping ulceration, or even threatening to become phagedenic, I have found a strong solution of the sulphate of zinc (gr. xx. or xxx. to oz.) a most

useful application. In these cases I have noticed great swelling and distension of the penis, the mucous membrane of the glands and prepuce being intensely red and shiny. These patients have generally suffered from long confinement to hospital, or have been cachectic or strumous.

This, then, has been the primary indication in the treatment of ulcers supposed to be syphilitic, but before any specific character has been developed; then we may predicate that if no ulterior symptoms are manifested, the probabilities are against constitutional infection; but at the same time, we should not be justified in guaranteeing immunity from it; because we see cases in which the earliest and most thorough application of caustic has been followed by fully developed constitutional syphilis.

When the characteristic induration of Hunterian chancre has taken place I have given mercury (generally by inunction), and have kept the patient slightly under its influence until the chancre and its induration had disappeared.

The discipline of a military hospital confers great advantages on the surgeon in the treatment of primary syphilis; and if the returns of military practice in this point contrast favourably with those of general practice, it is, in my opinion, due firstly to the fact that we can exact the most rigid diet and rest, and have at our command the free and unrestricted use of local cleanliness and remedial agents; and secondly, that the soldier is by unavoidable discipline prevented from plunging into that protracted debauchery which civilians may incur without punishment. He is also, by his regular exercise and generally good sanitary condition, in a better state to repel the inroads of specific disease.

On the point of secondary disease my observations must be most limited. We see comparatively little of it.

When a soldier's constitution is manifestly under the permanent influence of constitutional syphilis he becomes ineffective and is invalided. The connexion, moreover, which may have existed between primary and secondary disease cannot be so correctly ascertained in a depôt battalion as in a regiment, inasmuch as the young soldiers, of which the former is largely composed, are constantly passing by drafts to the service companies of their respective corps, and the old soldiers who may suffer from secondary disease, have probably contracted its primary form while serving with their regiments.

Out of twenty-six cases that I have had under care, three have shown tertiary symptoms in the tibiæ or cranium, with cachexia; three have had lepra; and the rest have had mild papular eruption, pain, enlargement of cervical glands, or sore throat.

I submit for the opinion of the society that the character of the secondary disease depends on constitutional influence in the individual, and not on the nature of the infecting sore.

In conclusion, let me remark once more what varied indications in the theory and practice of the treatment of syphilis have successfully swept over the profession from the days of John Hunter and "Essential Mercury" to the non-mercurial views of some of later days. As extremes beget extremes, so it was but natural that the excess of the mercurial theory led to a reaction, which in military practice about 1818 had reached to such an extent that in 1,940 cases sixty-five only were treated with mercury; but I am of opinion that these views and this practice among the members of my department have undergone great modifications in later years; that military and general practice are more nearly allied than is generally supposed, and that it is only in the absence of certain leading constitutional indications that army surgeons venture to consider primary chancre a local disease, and to treat it exclusively as such.

I have now laid before the society my imperfect mite of a contribution to its papers, under the assurance that its subject would be interesting; and I wish that it could be some slight acknowledgment of the courtesy which the society has always extended to the medical officers of the garrison.

TABLE I.—(*Averages*). *Primary Syphilis in 20th Depôt Battalion.*

Nature of Chancre	Nos. Treated	Days of Coming Under Cure	Days' Duration of Chancre	Days' Duration of Case	Bubo	Treated with Mercury	Secondaries	Cases of Secondaries after Mercury
Indurated, . .	14	3	22	34	–	10	4	1
Superficial, . .	47	3	25	35	16	9	6	1
Phagedenic, .	10	–	43	57	1	2	3	1
Totals, .	71	–	–	–	17	21	13	3

TABLE II.—*Secondary Syphilis in Relation to Mercurial Treatment.*

Total Primary Sores	Treatment	Nos.	Followed by Secondary	Per Centage
119	Mercurial,	31	12	40
	Simple,	88	14	16

TABLE III.

Comparative Table of Secondary Disease in Non-mercurial Treatment.

Authority	Nos. Treated	Followed by Secondaries	Per Centage
Hospital 20th Depôt Batt.,	88	14	16
Mr. Green, . . .	100	9	9
Dr. Hennen, . . .	105	11	10·50
Army Records, 1818, .	1,875	84	4·50

The Evil of Treating Secondary in place of Primary Disease, Illustrated by Cases of Albuminuria, Diabetes, and Scorbutus. By D. C. O'CONNOR, A.B., M.B., Professor, Queen's College, Cork.

There is no more common source of error in the investigation of disease than the liability of mistaking secondary for primary affections. This is the more likely to occur, because the symptoms of the former are more prominent, being, as it were, more on the surface than those of the parent disease, which accordingly do not arrest the attention of the patient, and may escape the notice of any but a vigilant physician. Before pathology was studied with such care as of late this error was most natural, and of frequent occurrence. The very nomenclature of disease in the older nosologies shows that the object of treatment was often the leading symptom rather than the disease which produced them. Dropsy was treated of as a separate disease, whereas we now know it is produced by disease of the heart, liver, various diseases of the kidneys, of the veins and lymphatics, and by diseased conditions of the blood. In like manner icterus was not treated as a symptom of disease of the liver and neighbouring organs, but as a disease *sui generis*. The same might be said of hemoptoe, hematemesis, and various forms of fever. The danger of falling into this error is not so great at the present day; but cases occur in which it requires the utmost vigilance to escape it. A few of these I will bring under the notice of the society, consisting of cases of albuminuria, diabetes, and scorbutus.

A patient was brought to the Mercy Hospital suffering from necrosis of the tibia. A few days after his admission he was attacked with stridulous breathing, a husky cough, and other symptoms of sub-acute laryngitis. I was consulted about the case by the attending surgeon; we thought it necessary to administer mercury, and also to use tartar emetic very freely. After the first day the symptoms became so severe as to endanger life from suffocation, but were gradually subdued by the

treatment adopted. When we thought all danger from this source at an end, and the surgical disease alone again engaged attention, I was struck, on passing the bed of the patient, by the peculiar character of the breathing, which was of the kind known as cerebral. He lay in a state of somnolency, but was easily roused when spoken to, and fell off to sleep immediately again. Seeing no other way of accounting for this symptom but uremic poisoning I ordered his urine to be examined at the first opportunity, and found that it was of low specific gravity, and loaded with albumen. Active measures were taken to relieve the condition of the brain, but to no avail. Respiration became slower and more feeble, till death ensued.

In this case I believe the attack of laryngitis was caused by the urea existing in the blood; but having none of the usual symptoms to call attention in that direction it escaped our notice. This and other cases have led me to conclude that in every case of chronic disease we should examine the condition of the urine. As an instance, a few days since, a patient called to my study complaining of loss of appetite and lassitude, which he attributed to the state of his liver, as he was at the same time slightly jaundiced. He had no symptom to lead one to suspect a disease of the kidney; till learning that he was more than usually drowsy at several times of the day, and his memory somewhat failing, I did not think the slight jaundice sufficient to cause such torpidity, and I requested a relative who accompanied him to bring me his urine for examination. He absolutely refused to permit this examination through a nervous feeling. A few days after I was called to see him at his own house, in a pseudo-apoplectic state, similar to that of the last case, which ended in death in about forty-eight hours from the commencement of the attack. In this case, like the last, the urine was found to be albuminous.

A gentleman under my care suffered from protracted bronchitis, of a peculiar character. It was never absent, Winter or Summer, and was attended with a copious heavy expectoration. The smaller bronchi were completely blocked up; but a loud mucous crepitus resembling gargouillement was heard all over the chest in the second division of the bronchi. I was attending for a considerable time before I suspected that there was some more permanent source of disease than inflammation of the bronchi, and ordered his urine to be examined—when I found it to be of very low specific gravity and full of albumen. In some time after the more characteristic symptoms revealed the true nature of the disease. He was attacked with general anasarca, and finally with effusion into the membranes of the brain, which terminated life.

There is at the present moment in the Mercy Hospital a patient who was admitted, labouring under extreme congestion of the left lung and chronic enlargement of the liver and spleen. When he was a few days

under treatment the left pleura became distended with serum, and for a short time a bruit was discoverable in the sounds of the heart. In this case also the urine was found to be of specific gravity 100·6, and loaded with albumen, and the probability is that the other affections are but consequences of the uremic poisoning.

Another patient, labouring under rheumatic gout, enlargement of the liver, with chronic diarrhea, is a marked case of albuminuria; but the urine being secreted abundantly, and the diarrhea preventing congestion of any organ, he does not suffer from any symptoms which would threaten danger to life.

Diabetes will also furnish some cases in which the primary disease is so obscured by secondary affections as to elude observation for some time. There is no disease more easily recognized than this when attention is called to its leading symptoms—the superabundant secretion of urine. But the patient of his own accord never adverts to this, believing, as all the world do, that an abundant flow of urine is useful. It is only when we have sought in every other disease an explanation of the debility and wasting of the patient that our inquiries are turned to this, and the patient is surprised that we look on that as disease which he considered a source of safety. If the disease has passed to an advanced stage without having been discovered it will be frequently masked by other disease which arise as a consequence. Some time since I was called to see a gentleman in the last stage of consumption. On examining his chest I found sufficient to account for all his symptoms. There were cavities in both lungs; and the night sweats having diminished the quantity of urine, I did not advert to that as a cause of disease. It was only in the course of conversation I learned from him that prior to any affection of his lungs he had an immense flow of urine, as he expressed it. On examination I found this a most marked case of diabetes, and am quite sure the rapid consumption only ensued as its consequence.

I was recently sent for to see a patient who was stated to be labouring under anasarca of the lower extremities. His only complaint to me was his inability to put on his shoes, and thought if this symptom were abated he would be quite well. It was only on testing his urine for albumen that I discovered the existence of sugar, and soon found that all the other symptoms corresponded with those of diabetes. Most of the cases of this disease, who live for a long time, have this symptom before death, owing to weakened circulation. In this case, though in respectable circumstances, neither he or his family suspected the secretion of urine to be a disease till I inquired into it.

The numerous diseases which follow on the changes which take place in the properties of the blood in scorbutus furnish instances of similar errors. A poor woman was recommended to the Mercy Hospital by a

lady, who stated she was in extreme debility from rheumatism; and such it would appear to be on a cursory examination, for she was scarcely able to move any limb without great pain. However, the characteristic livid blotch observed near one ankle, and the livid swollen gams, gave a clue to the true character of the disease, and led to a speedy cure. I have seen cases of this disease in which the only apparent symptom was at one time homoptoe, at another hematemesis, in another chronic dysentery, and in a fourth congestion and solidification of the lung resembling the second stage of pneumonia. Unless the parent disease be discovered in all these cases the lowering treatment adopted would be more likely to aggravate than produce a cure.

On Progressive Motor Ataxy. By Dr. L. W. SALOMONSEN. Translated from the *Bibliothek for Læger* for January, 1863. By WILLIAM DANIEL MOORE, M.D., Dub., M.R.I.A.; Honorary Fellow of the Swedish Society of Physicians, of the Norwegian Medical Society, and of the Royal Medical Society of Copenhagen.

AMONG the many departments of pathology on which physiology has thrown an especial light, and in which many ingenious and varied experiments have only in modern times found their true solution, the diseases of the nervous system must, of course, occupy a prominent place. It is true we are still unacquainted with the nature and qualities of the proper nervous agent, and we have nothing to substitute for the "esprits animaux" of the older writers, such as Willis, or for the assumption by more recent authors, as Wilson Phillips, Krimer, Weinhold, and Hastings, of electricity as the active principle; but with every year we learn more of the various properties of the nerves themselves, and we get a better insight into the different functions of the several parts of the nervous system. We need not go back to Bell's or Magendie's discoveries to justify this assertion; nor need we call to mind the experiments of Flourens, Bouillaud, van Deen, Stilling, Longet, and many others; I shall point only to some of the most important discoveries of recent times; for example, to the establishment, especially through the experiments with Curare, of the separate existence of the excitability of the nerves and of the irritability of the muscles, to the discovery of the recurrent sensibility, and of the various electrical currents in the nervous tissue itself—to the demonstration of the different course of normal nutrition in the several nerves, and of the many species of degeneration connected therewith. At the same time, but partly independently thereof, the pathological conditions of the nervous system have constituted the subject of much more

accurate study than before; entirely new forms of disease have been discovered and systematically adopted; nosology has been enriched with such diseases as, for example, general paralysis, fatty atrophy, the nervous syphilitic affections, nervous intoxication, &c; and some of the ablest pathologists, for instance, Cruveilhier, Romberg, Bouchut, and Duchenne have directed their attention especially to this department. Pathological anatomy has, with the aid of her improved means of investigation, in many instances been able to demonstrate the material substratum of the derangements of function observed in the living body, and to refer each separate affection to the lesion of a particular nervous apparatus, or to a single but definite part of the nervous system; and a necessary result of this has, again, been that the pathological conditions have, on the one hand, served as a proof of the correctness of the corresponding physiological theories, and on the other have encouraged, nay, it might almost be said, have compelled observers to undertake further and more accurate physiological experiments, in order to obtain a fuller insight into the essential nature and foundation of the pathological process. One of the most interesting examples of the last mentioned relation is afforded by the disease named in the heading to this article, which I shall here consider somewhat more at length in its several bearings. With the exception of a condensed, but very clear, article in the *Ugeskrift for Læger* for the 30th of June, 1862, this disease has not, so far as I am aware, been treated of in Danish literature, and it will therefore be well, here, to consider a subject which abroad, especially in France, has, of late years, attracted the greatest attention. On particular points I shall be able to refer to the article in question, which I suppose is known to my readers; taken on the whole, however, this disease will be considered by me from quite different points of view.

Comprised under the denomination "Ataxy" this disease is certainly of very recent date; it was only in 1858 and 1859 that Duchenne[a] described it under this name, as a peculiar new form of disease, hitherto indeed existing, but overlooked, which was previously mixed up with and referred to the more general forms of paraplegia, but which is distinguished from the latter by many characteristic marks, and ought, in all its relations, to be separated from the more general group. Without essential alterations, but increased by the experience of the intervening period, the same essay is to be found in his *Traité de l'electrisation localisée*, second edition, 1861; and on both occasions he has succeeded in giving such an aspect to the subject that many of his fellow countrymen, who, as is well known, do not in general trouble themselves much about foreign literature, have believed his discovery worthy of being ranked with Addison's bronze disease, Virchow's emboli, or Graves' cachexia

[a] Archives Générales de Médecine, December, 1858, *et seq.*

exophthalmica, and that, for example, Trousseau and Isnard prefer the term "maladie de Duchenne" to that of ataxy, in order to insure him his due share of merit. And yet Duchenne himself, much as he otherwise endeavours to put forward his own claims, even in his first article directed attention to the fact, that many earlier writers upon nervous diseases have reported cases which undoubtedly were examples of ataxy. Both Bouillaud and Sandras have, he observes, histories of disease which, in many points, approach to those of ataxic patients; but it is especially in Romberg's writings that under the name of tabes dorsalis we find a disease described which, in many of its characters, completely resembles ataxy. In itself, says Duchenne,[a] there is nothing wonderful in this; for the disease is frequent, and has, without any doubt, existed in all ages; but the observations communicated are either incomplete, or they resemble those of ataxy only in particular symptoms, or they are mixed up in one class with those of many other quite different diseases; and this more general assertion holds good in part, he says, also for Romberg's description. If, however, we examine for ourselves the grounds of this criticism, and peruse Romberg's descriptions of tabes dorsalis[b] to the end, we find, as I shall show hereafter, descriptions not only of the most important features in the symptomatology and course of ataxy, but also much more correct indications of the anatomico-pathological foundation of the disease than those recognized by Duchenne in his first essay. It is true the description is neither so exhaustive nor so well arranged and striking as Duchenne's, nor is it illustrated by so many interesting and well reported cases, but the fundamental features are the same, and in many respects there is even complete identity, both writers laying stress upon the great importance of one and the same symptom, for example—of amaurosis, pains, want of equilibrium, especially in the dark, of the uncertainty of gait and of the upright position, while in the horizontal posture all movements are perfectly free and normal. The honour only of the description of some, certainly very important symptoms, and of the arrangement and description of the whole process, belong, in my opinion, to Duchenne, and this view is shared by many others. Thus Wunderlich says plainly,[c] that the new disease described by Duchenne, ataxy, is in reality not new, but is only the form of disease known to everyone under the denomination of tabes dorsalis; and that in fact, besides the careful description of each symptom, there is only a single new point in Duchenne's work, namely, that he has been the first, decidedly, to insist on the fact, that the proper muscular power continues unimpaired to the end of the disease, and therefore at a time when any complicated movement is very difficult, if not perfectly impossible. And even, he adds, Duchenne is not the first who

[a] l. c., 1859, T. i., p. 446.

[b] Romberg: Lehrbuch der Nervenkrankheiten des Menschen, B. i., Abth. iii. Berlin, 1857. P. 905.

[c] Archiv der Heilkunde, 1861, p. 199.

has described this symptom; thus, although it is not mentioned by most German writers, Wunderlich has, even in his pathology, published so early as 1853, pointed to it by showing that the movements, peculiarly uncertain as they are, have nevertheless not lost in proper power or strength, and that in a recumbent position they can all be performed with ease. Notwithstanding that since the publication of Duchenne's work he has not undertaken more recent investigations in this direction, he does not doubt that Romberg's opinion that the disease has its seat in the spinal cord is correct, in opposition to Duchenne's, which refers it to the cerebellum; and he therefore calls the disease, in contrast to the stationary spinal paralyses, the progressive spinal paralysis. Even among Duchenne's own countrymen there are some, and especially those who are best acquainted with foreign literature, who entertain and put forward the same opinion. Charcot and Vulpian, two junior professeurs agrégés, who are quite familiar with what is going on in other countries, in giving a condensed abstract of Romberg's essay, express themselves to the following effect:[a]—"It is therefore evident that tabes dorsalis corresponds in all essential points to ataxy, and that very little is wanting in Romberg's description to render it complete." Bourdon expresses himself to much the same purpose.[b]

As, therefore, both Romberg's description and the article in the *Ugeskrift for Læger* are accessible to the Danish reader, I shall consider it unnecessary on the present occasion to give a detailed account of the symptomatology and course of the disease. I shall take leave only to sketch them very briefly, and to add some well-marked cases in illustration. In doing so I would remind the reader that the disease may, in general, be divided into three periods, namely:—1. The premonitory stage, characterized by paralysis of one or more of the motor nerves of the eye, the third or sixth cerebral pair, and consequent strabismus or ptosis of the upper eyelid; impaired vision; amblyopia, or complete amaurosis, depending on the lesion of the optic nerve; or diplopia, produced by the squinting—all existing either only in one, or, as Duchenne has three times observed, in both eyes; and, lastly, peculiar, piercing, fugitive, very violent pains, which come on with the rapidity of lightning or of electricity, and with intermissions of different duration, and which are usually increased by a slight, but are relieved by stronger, pressure. At the same time neuralgic affections of the genitals, incontinence of urine and feces, or difficulty, nay, impossibility, of spontaneous urination and defecation are often met with; spermatorrhea, diminished sexual desire, imperfect erection, or, on the other hand, as Trousseau especially has observed, very speedy emission, as occurs normally only in

[a] Gazette hebdomadaire, 1862. No. 18, p. 282.

[b] In Vol. xxxiv., p. 414, we have shown that our own countryman, Todd, was the first to describe this disease.—Ed.

many birds and mammalia, and a power of frequently repeating coitus within a short period. Such patients can sometimes repeat the act eight or ten times in the course of a night. At first view this might seem to be an augmented degree of virility, as in the normal state these sexual functions last a certain time, and cannot be repeated so often or in such rapid succession; but, in reality, it is a neurosis, and the proof thereof is, that in the same patient there has often existed incontinence of urine, and that, simultaneously therewith, involuntary daily or nightly seminal losses frequently occur. All these paralyses and other nervous phenomena are often transient, disappearing with or without treatment; and, when the patient subsequently presents himself for advice in the second or third stage of the disease, he has frequently altogether forgotten them, and mentions them only when directly questioned on the subject. The same is true of other symptoms of rarer occurrence at this period; for example, hemiplegia, of which Trousseau has seen an example. The patient was suddenly attacked with it, without losing consciousness; and in the course of a week it was again completely removed. Shortly afterwards the same patient was twice attacked with paralysis of the tongue, but each time it lasted only a few seconds before he could again speak. Immediately after the last attack, however, the locomotor symptoms of the ataxy occurred, and the latter now rapidly progressed. Duchenne has twice seen paralysis of the fifth pair, once even double, complicating paralysis of the third pair; the soft palate and larynx may then, also, be paralysed. Once, finally, he has observed paralysis of the seventh pair, also as a complication, among the premonitory symptoms. With the exception of the sight, the other senses are, on the other hand, unimpaired; only one of Duchenne's patients had lost the hearing of one ear. Vertigo may occasionally be present, otherwise there is no cerebral symptom whatever. In many instances one or more of these symptoms, rarely all, may be completely absent, and the disease may, therefore, immediately present itself with the abnormities generally characteristic of its second stage.

2. These form the principal marks of the disease—its pathognomonic characters—and they may briefly be stated as: progressive loss of the power of co-ordinating the various movements, and consequent apparent paralysis; which, however, contrasts strongly with the integrity of the muscular strength itself. With this is combined, in most cases, but not invariably, a greater or less degree of insensibility, sometimes merely cutaneous, sometimes also muscular. All this usually occurs first in the lower, and subsequently in the upper extremities, but in rare cases the opposite course may obtain. The patient finds a difficulty in standing or walking, is inclined to lose his equilibrium, or perceives a weakness in his lower limbs. He cannot stand quietly erect without reeling or leaning against something; if he walks, the different times in the movements of the legs, in his normal gait, are irregular and deranged; his limbs are

swung forwards or to the sides in all possible directions; the one leg either crosses the other or knocks against that of the person walking beside the patient; the foot is brought with such great violence with the heel to the ground as to shake the whole body; the steps are uncertain, making the patient afraid of falling, especially in walking quickly or in going down stairs. Some movements—for example, turning round or going to the side—are more or less impossible. Sometimes the patient feels as if driven forwards by an invisible but unconquerable power; and in one person the first symptom of the disease was, that one evening, when he attempted to go home, without wishing it, and without being able to stop, he was driven forward in a straight direction through the entire of a long street. The patient gradually comes to be unable to walk without support, and at last both walking and standing are quite impossible; after a few steps he feels excessively tired, is out of breath, bathed in perspiration, and is obliged to go back to his chair or bed. At first, and even when the disease is rather far advanced, he can, on the other hand, even if walking is at first uncertain, difficult, and slow, when the first steps are over, walk quickly and far, even several miles, upon level ground. Trousseau has, for example, seen a patient who had great difficulty in walking a few steps on the polished floor of the room, and who nevertheless had, the day before, perambulated Paris from one end to the other without fatigue. The ataxic gait, taken on the whole, resembles that of children when they attempt to walk upon a narrow bank or upon the edge of a railing, or that of an awkward rope-dancer. At a later period the movements of the limbs resemble those of puppets; in the imperfectly paraplegic, on the contrary, the feet drag along the ground, and are only slowly and with difficulty raised from it. Contemporaneously with the disturbance in the movements of the limbs there is usually more or less anesthesia of the parts; the patients feel the ground under them only indistinctly—have a sensation of walking on carpets or on elastic bodies, India rubber, round balls, &c.—do not know whether they have shoes on or not; or, when their eyes are closed, whether they are standing or sitting; nay, sometimes they feel as if they were floating on the air. In the upper extremities the abnormities usually begin by the patient observing, first in one arm and then in the other, a feeling of thrilling, and formication in the fourth and fifth fingers. Only once has Duchenne seen these phenomena occur first in the three other fingers supplied by the median nerve; at the same time the movements of the fingers continue deranged, and the hand is very awkward with any object. Notwithstanding all this, however, the muscular strength itself is not weakened. In the horizontal position the patient can perform every movement with the ordinary power; and if an attempt be made to prevent one of his movements, by acting on the limb in the opposite direction, we shall easily satisfy ourselves that the strength of the muscles is as considerable

as usual. If, for example, in order to investigate the strength of the extensors, we make the patient extend the leg, and then, while an assistant holds the lower part of the thigh very firmly, endeavour, by grasping around the ankle, to bend it, we shall find a considerable resistance. As a further proof of this, measurement on a dynamometer is employed. Duchenne has, for the use of patients of this class, constructed a new one, made upon the principle of the lever. Lastly, all the symptoms described as belonging to the first stage, especially the pains, continue or increase; if some of them have disappeared for a time—as, for example, strabismus, diplopia, or ptosis of the upper eyelid—they usually occur again. 3. In the third period, finally, the symptoms become more and more general; they attack additional muscles, and at last do not spare one muscle of the extremities. The patient can then neither rise from his chair, stand, nor walk without the help of several other persons, and at every step he swings the legs about in the most extraordinary and most different directions. He cannot dress himself; cannot bring his food to his mouth; cannot hold an object; cannot even hold another person under the arm for any time. He is condemned to a constant sitting or lying position, and gangrenous sores on the os sacrum or trochanters are then not slow to be developed, and to terminate his fearful sufferings. Notwithstanding this considerable development of the disease, the proper muscular power continues all the time unweakened; the muscles are not atrophied, nor do they undergo any degeneration; and they are normally contracted by electricity, though they have long since lost all sensation of its action. The patient's condition, too, continues for a long time good; the vegetative functions all go on regularly; there is, even to the last, no trace of any intellectual disturbance, nor does any paralysis of the lips or tongue ever occur. Finally, the urine—unless there be catarrh of the bladder, in consequence of paralysis of that organ—presents nothing abnormal; according to Mialhe's investigations it, in particular, never contains a trace of albumen or of sugar. On the other hand, as Trousseau especially has seen exemplified, the anesthesia may extend from the skin to certain mucous membranes. He has had a patient who at last did not perceive the bodies his lips came into contact with, often let the food fall from them, did not know whether it was cold or warm, and could only very imperfectly judge of its taste; the teeth had also lost their peculiar sensibility, so that the patient did not know whether an article of food was easy or difficult to chew. Usually, however, the anesthesia spares these organs, while through the rest of the body it gradually spreads, increasing both in intensity and in extent; and it may from the limbs even invade the trunk. The sensibility—both the cutaneous, the muscular, and articular or osseous—may at last be altogether extinguished; the sole of the foot and palm of the hand are usually the parts whose sensibility is first and most completely attacked, and thence the affection extends,

evenly and steadily, upwards. It is at first, and often exclusively, that which concerns the skin, the proper anesthesia, the want of sensation on contact, which is present; later, and always in a less degree, analgesia may be developed; only very rarely, and always at a very late period, is the sensation of difference of temperature attacked. This may continue to exist, even if the anesthesia and analgesia are complete. Sometimes the anomaly of feeling exhibits itself, not as a want of, but as a slowness in, the capacity to receive impressions—that is, to conduct them from the periphery to the brain. Two or three, nay, even nine or ten seconds, may elapse between the moment when the physician punctures or electrifies the skin of the legs and that when the patient becomes conscious of the effect. In very rare cases, lastly, the sensation is not at all affected, and nothing abnormal is to be found in any direction in the patient's sensibility. Notwithstanding the rarity of these cases, they are, as we shall hereafter see, of special importance in studying the physiology and mechanism of this disease.

The report of some cases will, I hope, illustrate the sketch I have above drawn.

One of Duchenne's typical cases is as follows:—

The patient was a man aged forty-eight, who had for a long time occupied a damp house, but had never been guilty of excess, and had not had syphilis. In 1835 he one night felt violent pains in the legs, which disappeared when he got up and walked about; they did not return until several months later. The intervals gradually shortened, and in 1841, while dancing, he found a difficulty in turning round. His strength now diminished very gradually; but even in the close of 1842 his gait had become very much impaired, and very unsteady, particularly in the dark, so that it resembled that of a drunken man. He was now subjected to energetic treatment, directed against a supposed affection of the spinal cord, and was sent also to different baths; but the disease steadily advanced, and in 1856, when Duchenne first saw him, his state was as follows:—All his senses were more or less affected. Hearing was completely lost in the left ear, and weakened in the right. As to the sight, in the commencement of the malady there had been well-marked strabismus convergens, which had subsequently almost wholly disappeared, but vision, nevertheless, always remained weakened; the left eye was hypermetropic, the right was myopic. Smell and taste had not suffered. He had a feeling of thrilling in the left arm and hand, and their cutaneous sensation was impaired; in the right arm the latter was more normal, and the patient could still write with tolerable ease. The movements did not, however, obey the will, and the aid of sight was necessary to enable him to perform them correctly. If he closed his eyes his left hand could not find the tip of his nose; the right found it with somewhat greater ease. When lying in bed he did not know whether his hands touched the

mattress or his thigh. If another person touched his skin, he perceived the contact, but could not tell whether it was his right or his left thigh which was touched. In walking, he had to rest after having gone about fifty steps, and he was obliged to look constantly at his feet in order to be able to guide them, as he did not feel the ground under him. By leaning on something he could stand upright for five minutes, but the least push would be sufficient to throw him down.

His articulation was free; his mental faculties were unimpaired. His digestion was rather slow, but otherwise it was tolerably regular; only when he had diarrhea did the feces pass involuntarily. In the beginning of his illness there had also been incontinence of urine, but this had disappeared. His limbs were plump and well nourished; the hips alone were slightly emaciated.

Sleep, on the contrary, was bad, and was interrupted by violent pains. These occurred particularly upon any change of temperature, traversed as painful spasms with the rapidity of lightning the whole body, except the vertebral column and the back, and extended from the toes up to the ear and vertex, but usually occupied at once only a very small width. They came on in paroxysms of from twelve to seventy-two hours duration, and were during such spaces of time intermitting; but the remissions became steadily shorter and shorter. In the knee it was as if a needle was slowly pushed through it; in the foot, as if the part was crushed under a horse's hoof; in the legs and thighs as if they were wrenched off with an instrument; in the wrists, arms, and chest, as if they were squeezed in a vice. But they were worst of all in the head—at one time resembling blows of a hammer on the occiput; at another, such violent dragging in the neck, that the head vibrated like a bell in strong motion.

On interrogating the patient, Duchenne was able to arrange these phenomena in the following series:—1. The diplopia existed in the commencement of the illness, about the year 1835, as the sixth pair in the left eye was paralytic, and this eye was consequently turned inwards; but it lasted only a couple of months, though his hitherto excellent sight was, and continued, weakened. This, together with the violent pains, constituted the premonitory symptoms, and this first period lasted many years. 2. It was not until the close of 1841 that the lesion of mobility and sensation began to be manifested in the lower extremities. In certain movements—for example, in waltzing or turning round—the patient was liable to lose his balance; he had a feeling as if he was walking on carpets; later he felt as if he walked upon elastic cushions. Gradually he became so bad, in the course of 1843, that he could not stand upright without fatigue, and while walking he swung his legs about in the most irregular manner. 3. Some months after, in 1844, he had begun to feel a thrill, first in the left, and subsequently in the right, fourth and fifth fingers, and some difficulty in using them; and this rapidly increased, so that soon all the muscles of the upper extremities were affected. The aid of sight did not

avail to ensure greater regularity in the several movements. It was not until 1857 that paralysis of the sixth pair again occurred, the pains having during the whole time continued unchanged. From 1843 the patient had been impotent. In 1858 the muscular power was still normal; the nutrition of the muscles was unimpaired; their electrical contractility was completely preserved, their electrical sensibility, on the contrary, was much diminished.

The following is another of Duchenne's cases:—

X. Rentier, aged forty, has never had syphilis; had gonorrhea only once; has never been given to Onanism; nor had spermatorrhea. In 1840, during convalescence from a slight gastric attack, he got paralysis of the third pair in the left eye, which was, however, removed after the lapse of three months. In 1845 and 1847 it returned, but was on each occasion removed in an equally short time; but the sight in this eye, which had hitherto been excellent, had from the first attack been perceptibly weaker. In 1847 the characteristic pains in the lower extremities set in. In 1848 there was a fresh relapse of the paralysis of the third pair in the left eye, and at the same time the patient suffered from some gastric affection, without fever, with obstinate constipation and nocturnal erections, but without seminal loss. Both the strabismus and the diplopia were now, however, again removed; only the weakness of vision, and this now in both eyes, and the pains continued. He thought himself better until 1852, when all his symptoms again returned, with the addition of vertigo and loss of the power of balancing himself in standing or walking; still he continued, on this occasion, to feel the ground distinctly under him, and was conscious, even without the aid of light, of the movements performed by his legs. Six months later he began to experience a sensation of formication in his fingers, and the movements of his hands became awkward. The pains extended. In 1854 he completely lost his sight, and from that time to 1856, when Duchenne saw him, his condition underwent no change. On examination, Duchenne found that there was complete amaurosis, partial paralysis of the third pair in the left, of the sixth pair in the right eye, considerable dilatation, and complete immobility of both pupils. The power of all simple movements was normal, but all the even only slightly complicated movements were performed in the most irregular and characteristic manner, and were very abrupt. There was complete anesthesia; the feeling of contact was very weak, and the electrical muscular sensibility was somewhat diminished; but the patient felt the passive movements which another caused the limbs to make; and if he was desired to move his legs inwards or outwards, to bend or extend them, he did it, and felt that he executed these movements, but he performed them without order and without control over them. Hence it will be seen that in this case the *first* period, characterized by pains, and by three attacks of amblyopic strabismus, had lasted twelve years

from 1840 to 1852; that the *second*, in which disturbance of the co-ordinating power of the lower extremities set in, lasted one year; and that, finally, the *third* period, in which the upper extremities also were attacked, commenced in 1853, and was still, in 1856, progressing.

Of the many cases of this affection reported during the last few years in the French journals, I shall here quote two in abstract.

The first observation is by Charcot and Vulpian :—[a]

Mrs. P., aged forty-two, whose mother had been three times hemiplegic, and who had herself, in her twenty-second year, had chancre, followed by secondary symptoms, had in 1849, after having lived for six weeks in a very damp house, begun to feel violent pains in many parts of the body, but especially in the back and left breast, with weakness of vision. At the end of three months the latter had, however, quite disappeared. In 1851 she got an attack of pleurisy, and during it the weakness of sight again returned, first in the left, and afterwards also in the right eye; this gradually increased, and in 1852 the left, and in 1855 the right eye also, became completely amaurotic. During the subsequent years she was, with the exception of frequent attacks of intercostal pains, and of cardialgia, comparatively well until the commencement of 1860. She then began to feel cold and numbness in her feet and legs, and the latter appeared to her to be as light as those of a child. Soon after, walking became difficult, and indeed impossible, without support; she could not walk slowly, she was obliged to go quickly; her legs, particularly the left, were often swung involuntarily forward, inward, or outward, and she often came between the legs of the person she leaned upon. A few months later she got a short fever, and when it was over she was completely paralytic in the lower extremities; blisters, and cauterization along the spinal column, brought her, after some time, so far, that she could drag herself on for a few steps. In July, 1860, however, the paralysis again became complete, and both walking and standing were now wholly impossible. From this time until January, 1862, the state of the limbs remained about unaltered, but her constitution was broken down by the development of phthisis. On accurate examination it was now proved that she was completely and absolutely blind, and that strabismus divergens existed, particularly in the left eye. As to the limbs, complete paraplegia was so far present that the patient could not with the lower extremities perform any combined movement whatever—for example, change her position in bed; still, each limb separately, although emaciated, appeared to have preserved a great part of its muscular power. Thus the patient could flex the thigh or leg strongly, and another could not then, against her will, again extend it. If she were desired to extend the leg, to move it forward, to the right or to the left, &c., she performed these movements, and even strongly, but

[a] Gazette hebdomadaire, 18th April, 1862.

by jerks, in several attempts, without order and precision. Her movements were, moreover, always in extremes; she exceeded the object she would attain, and soon felt excessively tired. She could, although with difficulty, sit in an arm-chair; but if she tried, even supported by two others, to stand upright, her legs would not bear her, but would hang helplessly down, and if she endeavoured to walk her movements were without co-ordination; one leg was bent, while the other was extended, one went forward, while the other went outward, &c. As to sensibility, the skin of the legs was so hyperesthetic that a slight touch produced violent pain, and, for example, woollen stockings caused a very disagreeable pricking and tickling in them; but at the same time the feeling was so perverted, that while she could perceive every excitation or contact, she could not form an idea as to the object by which it was produced. Her legs, too, were constantly cold; she had a feeling of formication, or of more violent pains, accompanied by subsultus tendinum, or stronger convulsive contractions, in them; and she often felt as if they were very light. She knew very well what position they occupied at any moment; she referred every contact of them to the right place, and felt it uninterruptedly, and readily distinguished warm and cold objects from each other.

Her arms were not at all affected.

At the end of March she got a colliquative diarrhea which soon proved fatal. The result of the *post mortem* examination shall be given hereafter.

In this case we have an example where the disease—although its premonitory symptoms, the lesions of vision, began in 1849—did not enter upon its second stage until 1860; and even at the time of death, or thirteen years after its commencement, had not passed that stage. That the affection may probably, but, it is true, only probably, have been connected with the syphilis which preceded it, is a circumstance which it may be worth while provisionally to bear in mind.

For the second case we are indebted to Charles Isnard.[a]

Madame X., aged seventy-five, has always suffered from headache, gastralgia, and retching. Her sister suffers from asthma; her son from gastralgia and from constantly-increasing deafness.

Three years ago the patient's attacks of headache ceased, and were followed by the precursors of ataxia. She began to see objects misty and double. It was a pure amblyopia, a weakness of the sense of sight itself, for there was neither strabismus nor ptosis of the upper eyelid. After the lapse of a couple of years these anomalies ceased, and were succeeded, in the commencement of 1861, by the proper ataxic symptoms.

The pains pass from the feet up along the whole legs to the loins, and finally, but very feebly, to the arms. They are situated in the substance

[a] See L'Union Médicale, 1862, Nos. 131, *et seq.*

of the muscles; do not follow the course of the nerves; are at first instantaneous, like electrical shocks, but become steadily stronger and more lasting, and are always worst at night. At the same time, and in the same sequence, the skin becomes anesthetic and analgesic; the patient does not feel the ground under her; does not know whether she has shoes on or not—for example, she goes to bed with them on; loses objects, such as her knife and fork, out of her hands; and does not perceive even deep prods of a pin. She has, moreover, an insupportable feeling that the skin upon her legs, and particularly upon her hands, is very rough and dry, although in reality it is of normal softness. The sense of difference of temperature continues unaffected.

A little later, in August, 1861, the want of co-ordination of movements begins to manifest itself, and both in the lower and upper extremities. In a state of rest the muscles act normally, and their strength is unimpaired—for example, her legs do not bend under the weight of her body, and she can, with ease, raise from the ground a large object, such as a chair—but the movements of the legs are irregular, and do not obey the will. Her gait is jerking, tottering, quick or slow; her body is thrown to the right or to the left; and, in order to avoid falling, she is obliged to support herself on something. The smaller an object is, the greater difficulty she has in holding it; she has, for example, great difficulty in tying her ribands or in fastening a button, and great uncertainty in bringing her food to her mouth. Her movements are, on the whole, less regular and equable than in senile palsy, and less awkward and fantastic than those in chorea. She cannot herself judge of the force of the contractions, nor estimate the weight or resistance of bodies, nor adapt power to obstruction. For example, she jumps violently out of bed, instead of rising quietly; squeezes another's hand with too great force, or brings her glass very suddenly up to her mouth; thus, from the want of the capacity to graduate the strength of her movements, she usually overreaches her object.

All other functions are regularly performed.

In March, 1862, she fell and injured the right trochanter major; immediately afterwards she became almost completely paraplegic in both legs, so that, although her movements were still tolerably strong, she could neither stand nor walk; the pains and the other anomalies of sensation increased in the same degree; bed-sores formed, and she died in April. No *post mortem* examination was permitted.

In contrast to the preceding case, we have here an example of a tolerably rapid development of the disease. The patient herself, as well as all her family, was predisposed to nervous diseases; she suffered, for many years, from one of the best marked and severest forms thereof, and when this ceased it was only to give place to one still more formidable. The premonitory symptoms of ataxia, in fact, set in immediately after;

and after the lapse of scarcely two years the second stage commenced. In the course of about a year the disease became general; and, although it was still far from having attained any great development, a comparatively slight cause sufficed to suddenly and greatly accelerate its course, and to bring on the final result—death.

(To be continued.)

CLINICAL RECORDS.

Hospital Notes from County Londonderry Infirmary. By Thomas H. Babington, M.D., T.C.D., Surgeon to the Infirmary.

Tetanus—Nicotine.—Three cases of tetanus—one traumatic, two idiopathic—were received into hospital in 1863. The first consequent on a compound fracture of left tibia, in a woman aged sixty-six years. Tetanic symptoms appeared on the morning of Thursday, the tenth day from the occurrence of the accident, and proved fatal on Saturday night, sixty-four hours from the first appearance of the symptoms. Notes of this case have been published in the *Dublin Medical Press.*

The idiopathic cases appeared to be occasioned by exposure to cold. One continued for four days. The second felt his first symptoms—stiffness of his neck and jaws—on Monday morning at breakfast, and he died on Tuesday evening at seven o'clock. In each of these cases *nicotine* was used, in one-third of a drop doses, every third hour; and although it failed to cure the disease and arrest its fatal progress, I have no doubt it effectually lessened the sufferings of the patients. In the third case there was a complete cessation of the spasms for several hours before death, which was occasioned by exhaustion.

Wound of Abdomen.—John Vancuelen, a Belgian sailor, admitted at 12 o'clock on the night of Tuesday, 13th January, having been stabbed a few minutes before in the left side, below the last rib over the spleen. A portion of omentum protruded through the wound. This was returned without much difficulty. There was great sinking, faintness, prostration, incessant vomiting, and coldness of surface—in fact intense depression of all the vital powers. These symptoms continued until 5 o'clock, a.m., on the 15th, when he died.

On *post mortem* examination, the abdominal cavity was full of blood. The dagger-knife with which the wound had been inflicted had passed through the spleen, dividing its blood-vessels, and penetrated the descending colon.

Fractures and Dislocations.—As usual, a considerable number of cases of fractures and dislocations came under treatment. One case of dislocation of the humerus into the axilla, of three weeks standing, was satisfactorily reduced.

A case of dislocation of the hip into the ischiatic notch, of two years standing, was admitted. The patient had a recent contusion on the formerly displaced joint, and by his want of candour and false statements led us very much astray in coming to a correct conclusion as to the real nature of his case. It was not until after he had been placed under chloroform, and the limb subjected to very considerable traction with pullies, and on failing to replace it in its normal position, that he informed us he had been lame for two years from the effects of an old injury occasioned by a fall from a horse.

The fractures of the thigh and leg, both simple and compound, were all treated in the straight and extended position, a practice which I have invariably adopted, and with the best results.

Poisoning by Oxalic Acid.—J. G., a shoemaker, aged thirty, in the horrors from excessive drinking, on 15th February swallowed a penny-worth (about 240 grains) of oxalic acid.[a] About ten minutes after a mustard emetic was administered. He vomited, and was brought to hospital about 7 o'clock in the evening. I saw him immediately after his admission. He was in a state of complete prostration; pulse very small and weak, scarcely perceptible; surface of his body cold and pallid; spoke in a low whispering voice; intense thirst; burning pain in epigastric region; and immediate vomiting of the fluid which he incessantly called for and drank to allay his thirst. In fact, he seemed in a moribund condition. A sinapism was applied over the stomach and epigastrium—indeed a very large one. Heat applied to the extremities and every part of the body; milk and lime water given to drink; stimulating enemata administered every six hours, and a mixture of tinc. opii, magnesia, and water, given at intervals. The next morning there was some reaction, but the vomiting continued. He was ordered draughts with hydrocyanic acid; to continue the mixture, and to have a large blister applied to the epigastrium. Under this treatment the irritability of the stomach gradually subsided, and he was able to retain small quantities of cold chicken-broth and beef-tea. Along with the irritability of stomach there was a most obstinately constipated state of the bowels, which were with difficulty opened by enemata; and there was, for nine days from his admission, total suppression of urine. Under a continuance of the treatment he gradually recovered, and left the hospital on the 17th March in a state of convalescence.

[a] Oxalic acid, being used by shoemakers and bonnet-cleaners, is sold in packages for one penny or two pence each, and hence is readily procured.

Nevus.—Two cases of nevus were under treatment—one a large one of the upper eyelid; the other above the right temple, about the size of a fourpenny piece—but were effectually treated by the frequent insertion of hot needles, as recommended by Mr. Wordsworth in the *British Medical Journal*, December 25, 1858, a practice which seems the best yet introduced for the removal of these very unsightly affections when of small size.

Polypus Uteri.—The patient was brought to hospital much exhausted from repeated hemorrhages, and stating that she had prolapsus uteri. On examination the existence of a large polypus protruding into the vagina was detected. A ligature was applied, with Gooch's canula. The polypus separated on the fourth day. The woman's health is perfectly re-established.

Hernia, in a woman aged sixty-five; had been strangulated four days. She sank, and died six hours after the operation. On a *post mortem* examination the intestine was found gangrenous, and open about three inches above the situation of the stricture.

Rheumatism.—An unusually large number of cases of acute rheumatism came under treatment. One of the patients stated hers was the ninth attack. Her heart was frightfully engaged, having been very much damaged by previous attacks. In all cases the alkaline treatment was adopted, and proved very satisfactory; and where the heart was engaged the application of a few leeches, and afterwards a small blister, afforded much relief. Under the alkaline treatment, when adopted early, I have observed that cardiac complications are much less frequent than I have found them when I have treated the disease with colchicum, or with calomel and opium. The mixture given was as follows:—Bicarbonate of soda, half an ounce; bicarbonate of potash, two drachms; nitrate of potash, one drachm; camphor mixture, ten ounces; an ounce was given every fourth hour. Covering the pained joints with cotton wool, and with Dr. Fuller's alkaline lotion, with tincture of opium, afforded very marked relief.

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29. Address to the subsection of physiology at the opening of the thirty-fourth meeting of the British Association in Bath, Sept. 15, 1864. By Ed. Smith, M.D., &c. On the present state of the dietary question. 8vo, pp. 16.

30. A treatise on fever: being part of a course of lectures on the theory and practice of medicine. By Robt. D. Lyons, K.C.C., F. & C. K.Q.C.P.I., &c. Second edition. London: Longmans, 1864. 8vo, pp. 473.

31. A handbook of hospital practice, or an introduction to the study of medicine at the bed-side. By Robt. D. Lyons, K.C.C., M.B., F. & C.K.Q.C.P.I., &c. Second edition. London: Longmans, 1864. Post 8vo, pp. 137.

32. The journal of British ophthalmology, and quarterly report of ophthalmic medicine and surgery. Edited by Jabez Hogg. London: Churchill. No. 1. Oct., 1864. 8vo, pp. 112.

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